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GLEANINGS

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

BEE CULTURE

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STRAY STRAWS

FROM DR. C. C. MILLER.

THIS YEAR 17,728 $1\frac{1}{2}$ sections averaged 14.41 oz. each, against an average last year of 15.088 oz. [Can you give any reason, doctor, why there should be a whole half-ounce difference between this and last year?—ED.]

DOOLITTLE SAYS, page 737, that with drawn foundation for bottom starters only two rows of cells are needed. I wish he'd tell us what he has tried "along this line." I've found more trouble about having very narrow starters of foundation gnawed down, and feared it would be the same way with drawn foundation.

HONEY-BOARDS, that so many of us have been replacing with thick top-bars, have a good word in *A. B. J.* from F. L. Thompson. He thinks sections are whiter over the honey-boards. With very black brood-combs a greater distance helps about keeping sections white; but does the gain in whiteness pay for the extra trouble, time, and expense?

THE EDITOR of *Review* expects to be at the Northwestern convention at Chicago, Nov. 10, 11. How about the editor of *GLEANINGS*? Don't think of my ever speaking to you again if you don't come! [If I can possibly go I will. But some unforeseen circumstance will very possibly prevent my coming at just the date on which the convention is held.—ED.]

SOMNAMBULIST, who dreams out such wide-awake ideas in *Progressive Bee-keeper*, wants to know if I didn't learn the value of sleep at Buffalo, and says: "The 'stay-at-homes' have at least a crumb of comfort in the knowledge that we didn't have to sleep on a cot, with old shawls for a mattress." Look here, Sommy, those cots had first-class woven-wire mattresses, and I slept just as well as if on a gilded couch until Leland, hopeful scion of the house of Root, came hammering me to wake me up.

PROF. COOK believes in bee-keeping for others than specialists, and says I accuse him of changing his mind in that regard. I kind o' think he'll change his mind again if he'll look up what I said. The only place I find where

I said any thing about it is on p. 585, where I said, "Prof. Cook favors a return to the old plan of having a few bees on every farm, rather than large apiaries in the hands of specialists." That doesn't mean that you've changed your mind, professor, but that you want others to change their practice.

ELIAS FOX is entirely right, page 739, that locality does not rigidly and entirely control taste. While the general rule holds that people in general prefer the honey of their own locality, plenty of exceptions are to be found. Buckwheat honey is hardly known here, and yet some of my friends much prefer it to the best white clover. It's not a matter of cultivation; they seem to be born with a buckwheat taste. He is also right that one colony will propolize three times as much as another in the same apiary.

T. GREINFR, the well-known agricultural writer, although not a bee-keeper, was present at the Buffalo convention, unfortunately at a session when there was what he calls a disgraceful squabble, and in *Farm and Fireside* he advises as an outsider that Mr. Benton, who is a meritorious but impulsive bee-man, should gracefully make amends for offensive personal remarks, and abstain from referring to the services he might render, or refuse to render, in his official capacity to the society, and then be reinstated to full membership. Not bad advice.

THE VARIATION in the weight of finished sections this year was very great. The lightest case of 12 sections was $8\frac{1}{2}$ lbs., and the heaviest case $12\frac{3}{4}$ lbs. Of course, the lightest section of the lightest case and the heaviest section of the heaviest case were still farther apart. It hardly seems right to sell such sections by the piece. [Say, doctor, you want me to knock that chip (honey by the piece) off your shoulder. I just won't do it, but next time I go out among bee-keepers I will stick you on the rear end of my bicycle, if you don't get too fat, and let you see that selling by the piece, in some localities at least, is the simplest and easiest way, and in accordance with the Golden Rule.—ED.]

I CAN'T TELL whether you're in fun or earnest, Mr. Editor, p. 730, so I don't know whether to get mad or not when you say you'll make a glossometer to measure the tongues of

Doolittle's bees *after* he stretches 'em. Why, bless you, he must have the glossometer to select the ones to breed from so as to stretch the tongues of the next generation. Say, what can you furnish a good glossometer for? [I am sorry, but I really can not tell whether I was in fun or in earnest on page 730. About that glossometer—well, I do not know about what it would cost—don't care much; but we have one in the garret somewhere in a cubby-hole, or on a shelf, that Doolittle can have if he will simply ask for it. It was made by J. H. Martin, and is illustrated on page 220 of GLEANINGS for 1882.—ED.]

W. P. FAYLOR lets his customers sample comb honey and extracted side by side, calling attention to the greater thickness of the extracted article, and, as a result, sells ten pounds of extracted to one of comb. But he doesn't give the relative prices.—*Am. Bee J'l.* [Mr. Faylor is working on the right plan. The majority of bee-keepers, I think, would prefer, for their own table, extracted honey, provided it is properly ripened; and I believe the majority of consumers, if they could be sure of the purity of the honey, would prefer the extracted. While a great many, it is true, prefer comb honey, the element of cheapness in favor of the extracted would go a long way to show that Faylor's policy is a good one.—ED.]

THIS YEAR, from 239 colonies, spring count, I got 17,150 lbs. honey, all comb but 300 lbs. That is the biggest yield I ever got, but not the biggest yield per colony. [Doctor, that is grand; and, if I mistake not, the labor of securing this crop was all performed by yourself and women-folks. It would be interesting to know approximately how many days it took you and your family to secure that crop. What I mean is, how many days it took you, counting the time of preparing sections, hauling bees, putting on the sections, putting into and taking out of the cellar—in fact, every thing connected with the bee-work. With another year or two like this you will have more than made up for the poor seasons you have had, and perhaps you have already. There is nothing like sticking and hanging to a business, even if it does not pay very well some years.—ED.]

SOMETHING LIKE A BOOM seems to be started in *American Bee Journal* for figwort, or Simpson honey-plant. That means some people are going to be disappointed. Geo. W. Williams says an acre of figwort is worth ten of sweet clover, and he considers figwort the only plant worth cultivating for honey alone. While that may be true for *him*, it is also true that, of the many who have tried it, perhaps no one else would coincide with him. [Our own experience, so far as I can remember, would lead me to believe that G. W. Williams' estimate of figwort as against sweet clover would not be far from right. I feel quite sure that a plant of figwort, taking about the same amount of ground as an equally vigorous plant of sweet clover, would yield ten times as much honey. Many and many a time I have watched the bees on our figworts. I have

seen single bees take from a single cup or floweret of this plant about all the nectar it could carry at one load. While the drop is not quite so big as one from the spider-plant, there are many more of them.—ED.]

"BEES GATHER WAX in dull seasons," says the editor, p. 738. I think I have had some evidence that not a particle of such wax is ever used in comb-building, but only as a substitute for or in combination with propolis. [I think I have some evidence that a good many particles of such wax at such seasons of the year are used in comb-building. For instance, let me refer you to Figs. 5 and 6, p. 640, Sept. 1. And don't you believe that the bees almost invariably build combs heavier—that is, with thicker walls and thicker bases—in dull seasons, or when the honey-flow is very moderate, than they do at other times when honey is coming in at a good rate? But I suspect you are right, nevertheless—in fact, I know you are—in thinking that bees use a good deal of wax that they gather from old combs left exposed, as a sort of filler to go along with propolis.—ED.]

EDITOR YORK is a great believer in sweet clover. He pummels Prof. Panimel for saying it's a weed. Better arbitrate the matter. A valuable plant in one place may be a weed in another. One of the worst weeds I ever had to fight in a rose-bed was white clover. [I can not exactly see how something could be a bad weed in one place and a valuable plant in another—at least, not how sweet clover could be a noxious weed in *any* locality. Experience everywhere, so far as I know, shows it is very easily kept down, and that it never bothers on cultivated land. The mere fact that it grows profusely along all roadsides, where it is rarely if ever molested, gives a careless observer the impression that it would be a serious enemy to the farmer if it got started on his land. But every good thing has to have its opposers until it can have time to win its way and show that it is not as bad as its enemies think it is.—ED.]

PARAFFINE PAPER over sections, F. L. Thompson says in *A. B. J.*, is too fussy; and after the early part of the season the bees daub propolis between sections and paper. My own experience says that entirely too much has been claimed for paraffine. My bees deliberately plaster glue right on the paraffine. [It was I who, about a year ago, spoke favorably of paraffine paper; but at the time, I stated that Mr. Danzenbaker and Hon. Geo. E. Hilton had obtained good results with it, but added that we had not tried it. I am sorry to have to acknowledge, however, that our own experience on a limited scale has not been entirely favorable—rather otherwise if any thing. Mr. Danzenbaker, however, has especially emphasized the fact that bees will invariably gnaw through the paraffine paper unless it is cushioned thickly on top—that is, between the paraffine paper and the cover—with folds of newspaper, quilts, or any thing that will press the paraffine paper tightly against the sections. But we did this, and the bees gnawed into it—or, rather, we used a

super that Mr. Danzenbaker had prepared as being just right, and the result was as stated. I should like to know whether the doctor, or friend Thompson either, cushioned the paraffine paper down. In the mean time perhaps friend Danzenbaker would like to say a word.—Ed.]

PEDDLING MADE EASY.

A Few Capital Suggestions; Giving Away Samples and Taking Orders Afterward; the Value of the Honey-Leaflets.

BY DAN WHITE.

I told you in my last article that I had about 7000 lbs. of extracted honey, and expected to sell every pound of it near home, and promised to report later on how I got along, so I will tell you about my experience in new territory.

You see I must reach out further than ever before, so I decided to try a place twenty miles away—a place of about five thousand people; so one morning I packed my grip and took two 12-pound cans of honey and started out. About all I had in my grip was a good supply of those leaflets published by The A. I. Root Co.; then 50 postal cards addressed to myself.

I got into the town just before dinner time; and after eating a good meal at a boarding-house I filled my pockets with leaflets and took one honey-can and commenced business. I started down a street and did not miss calling at every house. After ringing the bell, or rapping, a lady would open the door and look at me with more or less suspicion. I would say, "I made the call to ask you if your family were fond of honey."

They generally answered yes, but believed they would not buy any.

"Well," I would answer, "but I am not selling honey to-day. I am giving it away, and should be glad to give you some in a sauce-dish."

Some would look astonished, others would smile, and say, "That's funny," but in every instance I was invited in. I would pour out the honey, then hand out a leaflet, telling them to read every word of it. "You will find it very interesting; it will tell you all about honey—how and why we extract it, etc. Then here is a postal addressed to me; and should you decide to want a 12-pound can, put your name, street, and number, on the card; drop it in the office; and when I deliver in about ten days you will get a can of honey."

Well there were enough cards put in the mail within five days to take thirty cans of honey. I promptly made the delivery on time, taking along twenty extra cans that sold about as fast as I could hand them out; and since then I have received orders for 50 more cans from the same town. I tell you, it has got all over town that a honey-man had been there selling *real* honey, 12 pounds for one dollar. I am certain this one place will take over 2000 pounds, all in one-gallon cans.

Now, then, 18 pounds of honey given away from house to house; 50 postal cards, 200 leaflets left at houses and handed to people on the street, and one day walking over a very small portion of the town, has found a place for at *least* 2000 pounds of honey. Then think what I can do next season should I secure a good crop. All I shall have to do is to take a big load and go up there and hand it out. By the way, the honey sold there was thrown out of clean white combs, over every inch of whose surface the uncapping-knife had to go. It weighed strong 12 pounds to the gallon—just as good as the best comb honey, *only* it was out of the combs. Of *course* I can go back just as often as I choose; yes, and the people will all be glad to see me.

We read about the trouble in grading comb honey, and just how to get it in the market to the best advantage; but I want to ask, what would happen with comb-honey producers if the bees could only be influenced to fill the section combs one day and cap over ready for market the next day? I imagine there are some who would favor this very thing. Yes, sir; some would advertise a strain of bees that could be controlled in that direction easier than any other strain. Others would say, "Hold on! my bees must go on in the good old way, and not cap over any honey until it is ripe and wholesome to eat." We will call the latter class honest men who can build up an honest trade for their honey, and then hold it if the former class would just keep away. Now, sir, I shall call the *former* class dishonest, not only to their customers, but dishonest to themselves *especially*, if they expect to continue in the business. Then they would be dishonest because they would do a great injury to the honey market in general, and this is the very worst thing of it all. Don't forget that *very few* people get tired of good first-class honey; and, above all, remember that almost any one will tire of poor, thin, unripe honey.

One thing we must always expect; and that is, some of these fellows who have only a few colonies of bees will annoy us by extracting poor honey, and finding some one to buy it, because they call it honey, and often find customers because they make a price below any thing heard of. This class, of course, don't care, as they care nothing for a reputation. Some seasons they have a little to dispose of, and other seasons they make a failure. Thank fortune for their failures! But what can we say to bee-keepers who handle large apiaries, to convince *them* they are doing wrong? I personally know several who are scattering this unripe honey over the country. This makes me believe there are just lots of these fellows, because my acquaintance does not reach out very far over this broad land.

I am saying more than I want to about this; but I am in earnest, and wish I could influence some or all to see as I do, and then see how easy it will be to dispose of our honey.

Only last season a man called on one of my customers who annually buys from 50 to 75 pounds of me. Being out of honey he was influenced to take 50 pounds of *his* honey.

One reason he bought of him was because the price was lower than he had ever had it offered. You see, this was two or three weeks earlier than I could get any *good* honey for my customers. I found this out when I did call, and told him he had made a mistake. Now, here is the secret of all this. When I called on this family this season with some *good* honey they had plenty left over from last season's supply. What must I now do? Well, I will tell you. Start all over new; call for a dish, and give them some to renew that taste for honey. It worked just like a charm, for it was only a day or so when I got an order for 20 pounds; and later on, 40 pounds.

I could enumerate several places where this energetic hustling bee-keeper caused this same trouble. Now, is it surprising that we hear so much about poor honey markets, especially extracted honey? I don't want any one to think I am worrying about the sale of my own honey, because they will be very much

read what he has to say, the more I believe he is chock full of good hard common sense.

Peddling seems to be very distasteful to many; yet the most disagreeable feature of it is removed by the method proposed. To knock at the front door and try to *force* a sale is something that nine-tenths of us will not do; but to tell the lady of the house that you are not selling any thing to day, and that you would like to *give* her a sample of nice honey—why, it seems to me that would be easy. Then the idea of letting the honey-leaflet and the postal card do the talking, and take the order afterward—well, it is the best idea that has yet been proposed.

I hope every reader will take pains to read this article. Try the scheme, and then report. You may not all be as successful as was our friend Dan, with his honest-looking face and general appearance of one who earns his bread and butter and honey by the sweat of his brow. I tell you, it is worth a good



THE FALLEN BEE-TREE; THE CHILDREN THAT ATE THE HONEY.—SEE EDITORIALS.

mistaken. My aim is to see if I can't fix it so these fellows who want to sell and market their honey can feel as good about it as I do.

I have said enough for one time, and will close after telling one thing more that I candidly believe to be true. Now listen. If the people in Ohio were properly supplied, or eating what honey they would eat if it were put before them in the right shape, the supply would not equal the demand, even if every State joining should depend on Ohio for a market. Use your customers right. Look up your own territory right; peddle no better than I do, and you will believe as I do.

New London, O.

[I have spoken highly of our friend Dan White before; but the more I see of him, and

deal to have an honest heart inside; for in a short time it will blazon itself in big letters all over the man. I am going to ask Dan to send us a photo of himself.—ED.]

DEVELOPING THE HOME MARKET.

Trading Honey for Ducks, Pigs, and Pups; an Interesting Experience.

BY GEO. L. VINAI.

In all the literature on bees and honey, we are urged to develop the home market. Acting on the advice, after I had traveled over my regular route this fall I went into an entirely new locality. After enjoying the scenery

and the sunlight for about a five-mile drive I called at a farmhouse and inquired of the good lady if she would like some honey.

"Well, yes. I should like some, but I have no money."

Seeing some ducks, I offered to trade honey for ducks; and for a pair I gave four pint jars of honey.

Calling at another house, I sold \$2.00 worth for cash; and while I was talking with the man one of the ducks gave a quack, which led to an inquiry as to what I had. I told him I had traded honey for ducks.

"Well, now, look here; can't I trade you some hens for some honey?"

I traded for half a dozen, and made the children, I hope, happy (I was). In this way I passed the day, and on my drive home I was trying to figure out my profits.

I had disposed of two gross of pint jars, and 120 pounds of comb honey. For the pint jars I received 25 cents; also 25 cents each for the sections of comb. I had had a royal day's sport; and as I listened to the quack of the ducks and geese, the cackle of the hens, and squeal of the pigs, and looked at the large box of eggs that I had in the wagon, I thought I would have to send for some of Dr. Mason's egg-preservative.

After getting home I took account of stock. I had \$54.40 cash, 108 dozen eggs, 8 ducks, 1 goose, 2 pigs, 24 hens, and 1 bullpup. (The pup is for sale.)

Charlton City, Mass.

THE TALL SECTION.

Who First Brought It Out? Patents.

BY F. C. BASS.

Mr. E. R. Root:—Why do you allow readers of GLEANINGS to be misinformed by calling a copy of a section used by Capt. J. E. Hetherington for the past twenty years the "Danzy" section? I suppose it is because you are not posted. Please allow me to inform you that the so-called "Danzy" section, $3\frac{3}{8} \times 5 \times 1\frac{1}{8}$, was copied from J. E. Hetherington's section in this State five years ago. I see the "Danzy section" is now changed to $4 \times 5 \times 1\frac{1}{8}$. Why not change again to $4\frac{1}{4} \times 5\frac{1}{4} \times 1\frac{1}{8}$, so those who wish to deceive the eye can do so by simply adding one inch to the top of old supers? If this does not satisfy you as to who is the originator of the tall section, I will go into particulars, as I am personally acquainted with the parties and facts in the case.

I notice great change in the management of GLEANINGS. Instead of fighting against patents on bee-keepers' supplies, it is controlling patents on foundation and bee-hives. I do not see why we should not patent them as well as other agricultural implements.

Front Royal, Va., Oct. 18.

[Why, my friend, *you* are not posted on what has been printed in GLEANINGS. Mr. Danzenbaker does not claim that he introduced the deep section. In fact, I think he has stated more than once that Capt. J. E. Hether-

ington was using sections $3\frac{3}{8} \times 5 \times 1\frac{1}{8}$; and I know he has said that, after he had been to Capt. Hetherington's, and seen his beautiful honey, he became convinced that the deep sections were the ones he would use.

Why do we call the section the Danzy? For the reason that it has a peculiar opening or bee-way. There is no bee-space on one side, and a bee-way on the other, and those bee-ways are decidedly different from those Capt. Hetherington uses. The latter would probably not care to father such a form of section, and we have therefore called the section the Danzy. We are very well aware that Capt. Hetherington was one of the first to use deep sections, and we are sure we have no desire to deprive that distinguished bee-keeper, whose good will we value much, of his rightful credit.

Yes, indeed, we believe that *worthy* inventions, even in apiculture, should be protected by a patent. The "boys," of whom I am one, have never experienced a change of mind in regard to the subject of patents. We stand to-day just where we always have stood; and A. I. R., while somewhat of the same opinion as before, has no desire to interfere with the changed policy regarding patents.

Later.—Since writing the above, Mr. Weed has called my attention to the fact that the "deep section is older than the hills." We have run across an old volume of Kidder, published in 1868, where the deep section is illustrated and described on p. 174. The remarkable part of these sections is that they had no bee-ways in them. They are simply boxes without top or bottom, deeper one way than another, with plain edges. A sort of cleated separator was used to regulate the bee-spaces. Even Kidder himself does not claim that this section was original with him.—ED.]

POISONOUS HONEY-PLANTS.

Scotch Heath.

BY MRS. L. E. R. LAMBRIGGER.

Replying to Dr. Miller's Stray Straw in Oct. 1st GLEANINGS, I would say there is probably no mistake about the existence of Scottish heather in New Jersey. The late Peter Henderson, himself a Scotchman, says: "*Calluna vulgaris*, the only species, is the well-known heather of Scotland, popularly known as ling, or common heath; a low-growing, much-branched little shrub, with very pretty rose-colored, purple, or white fragrant flowers produced in crowded axillary clusters, forming one-sided (mostly) spikes or racemes. This beautiful little plant has become naturalized in a few localities in America. It is reported at Tewksbury, Mass., and at Cape Elizabeth, Maine. It is also found sparingly in Nova Scotia and Newfoundland."

NATURAL ORDER, ERICACEÆ.

Turning now to Gray's Manual, page 318, I find the following:

"*Calluna vulgaris*. Low grounds, Mass., at Tewksbury, and W. Andover; Maine, at

Cape Elizabeth; also N. Scotia, C. Breton, Newfoundland, etc.; probably only introduced."

Further down same page occurs this:

"Two European heaths, *Erica cinerea*, and *E. tetralix*, have been found in small patches on Nantucket Island."

Turning again, this time to my encyclopedia, I quote:

"*Calluna vulgaris*, sometimes called the ling, is the common heath, or heather, and

two, *E. cinerea* and *E. tetralix*, are widely diffused and abundant; the others are more local.

To summarize, and add a few words of explanation that the reader may not be confused regarding terms:

Calluna vulgaris and *Erica cinerea* are one and the same plant; viz., Scottish heather. I myself did a good deal of searching and comparing of botanical terms and definitions before I found this out. When two high author-

ities seem to conflict, or are most provokingly silent and obscure where they should be the very reverse, it is often difficult to get at the truth. Our only recourse is books—more books—many books—reference works; and the average home is not overstocked with these.

The Latin word *cinerea* means ashy gray, or ash-colored, and not fine-leaved, as one authority gives it. The heather belongs to the heath family; but all heaths are not heather, and this brings us right to the point under discussion; viz., poisonous honey. I do not claim to know whether any living plant secretes poisonous nectar. I wish I did know, as in that case I would soon end the discussion. My aim is to try to help find out. To this end, allow me to again quote Peter Henderson, the father of horticulture in America. Under the head of "Poisonous Plants" he says:

"Of the 100,000 known flowering plants, it is stated that 10,000 may be considered deleterious, all being more or less energetic in their action; and of these, probably fifty are deadly.

It is a singular but generally understood fact, that all plants having green flowers are poisonous, either in their leaves, stems, seeds, or roots."

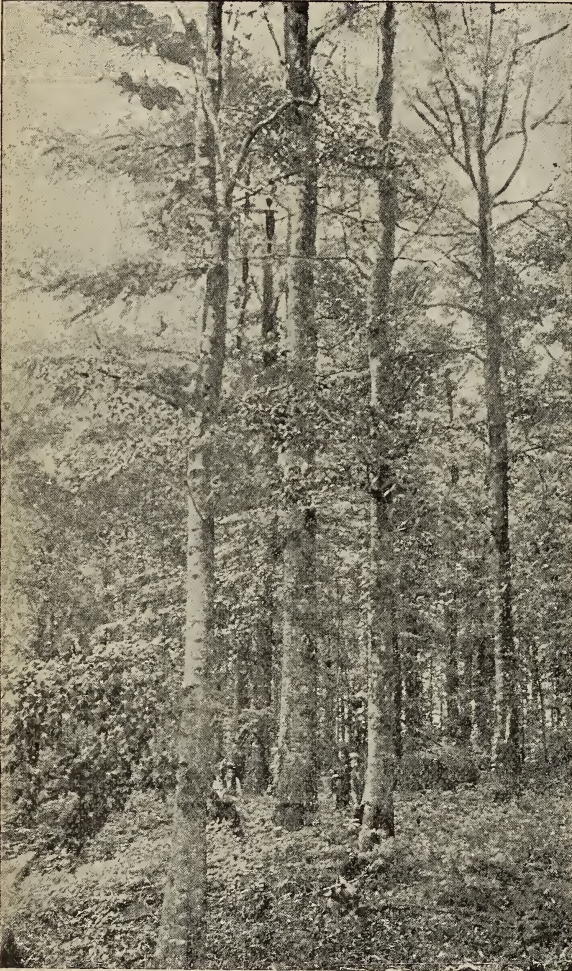
He then adds:

"These dangerous qualities are generally mentioned in this work"—meaning his "Handbook of Plants." Italics mine.

Now, friends, I have studied the subject very carefully. *Azalea pontica* is the heath from which the honey was obtained that is supposed to have poisoned

Xenophon's soldiers; but Mr. Henderson makes no comment on the plant, further than to state that it is a native of Turkey. In like manner he has only good words to say of the mountain laurel, *Kalmia latifolia*; but in treating of its near relative, *Kalmia angustifolia*, he tells us that it is deadly to sheep. On the other hand, my encyclopedia gives the following:

"The leaves of *Kalmia latifolia*, the laurel



OHIO WOODS—CUTTING DOWN A BEE-TREE.—SEE EDITORIALS.

the most abundant species of the family in Britain. It is the plant whose flowers render the slopes of most Scottish hills pink in autumn, and the one so abundant in Epping Forest. Ornamental varieties are sometimes grown in gardens. The plant is astringent, and is employed by both fullers and dyers, and the flowers are very attractive to bees."

The genus *Erica* comprises about 400 known species, of which five are British. The first

ivy, spoonwood, or calico-bush, are poisonous to many animals; and the flesh of pheasants which have fed on it is said to be deleterious to man. A honey-like juice exuding from the flowers brings on phrenetic excitement."

Can Prof. Cook enlighten us as to the probable truth of the last statement? For myself, I offer no settled opinion on the subject; however, I am decidedly in favor of having the matter ventilated to its fullest. In a few days I shall be in receipt of a new and up-to-date reference library. This subject will be the first looked into; and if I find any additional light, or confirmation of what we have, I promise to report.

Niobrara, Neb.

A FEW MORE FACTS CONCERNING THE RIETSCHKE PRESS.

BY F. L. THOMPSON.

Mr. Root.—I will assume that both of us want to get at the exact truth concerning the Rietsche press, and so confide to your tender mercies a few more facts. My two chief points are, first, that we do not know enough of the Rietsche machine; second, that many can not afford to buy foundation, and, if possible, something ought to be done for that class.

In the August number of *La Revue Internationale* is an article on the Rietsche press from the manufacturers' point of view, by Alf. de Trey. He says the fact that Rietsche foundation is more rapidly worked by the bees than factory foundation is simply due to its greater thickness, and that he knows this by experience. He also contends that this greater thickness destroys the advantage of cheapness, making a difference in value of wax amounting to 1 franc for every 9 Dadant frames; and that the brittleness is so great, since Rietsche foundation can not be handled readily below a temperature of 19° (apparently centigrade = 61½ F.), that a number of people he knows have been completely discouraged by that fact. Ulrich Gubler comments on the article by asking whether exposing the sheets to the sun before using is more trouble than to write to the manufacturer, wait some time for the merchandise, and unpack it when it comes; and that thickness is far from being a fault; for if a swarm finds an extra pound of wax in its sheets, it does not have to produce it; hence, six pounds of honey is saved, as well as the time for gathering as much more. (This last argument seems to me rather singular. Under certain circumstances, and generally, I believe, bees build combs from foundation without making all possible use of the wax therein contained, or anywhere near it. Still, there may be something in it. Did not the report of the Ontario Station give an account of an experiment with black foundation, in which the completed cells showed a regular gradation of tint from the septum to the outer edges of the cells?)

From the above one might conclude that both sides agree Rietsche foundation is always thicker than factory foundation; but this con-

clusion would be at least dubious, for neither of them says any thing about wire, and we know that Rietsche foundation abroad is used without wire, whatever may be the reason; hence the comparison may be between unwired Rietsche foundation and wired factory foundation, which would hardly be fair.

I also ran across an old catalog of German bee-supplies, which I did not know I had. According to this, when a sheet measures 25 x 20 centimeters, 20 is the depth. I had supposed these were full-depth dimensions, which would have made the longer dimension vertical. However, the fact that it was intended to be used without wire is sufficient to account for the weight of the sample you received. The smallest press, 22 x 17 centimeters, costs, with packing, 10 marks, or \$2.38; the largest, 45 x 30, \$8.15. I estimate the L. size would be about \$5.36. There are 10 sizes in all. A simple device does away with any necessity for trimming the sheets. The chief instructions are as follows:

"Apply to the plates with a brush a mixture of one part honey, two parts water, and three parts pure alcohol. Pour wax on the under plate, and shut quickly. Shake the surplus back into the wax vessel. Cool in water, if necessary. Open and remove the sheet. The time consumed for all this is about one minute. The amount worked by one man per hour is from one to three kilos, according to the size of the press; consequently, a press soon pays for itself. The sheets are thin or thick according to the temperature of the wax and degree of cooling, so that thin or thick sheets may be produced at pleasure. After some practice it will be easy to make a square meter of foundation with moderately high cells out of a kilo of wax, or 1¼ square meters with shallow cells. A surface of four-fifths to one square meter is just enough to be completely worked up out of the wax given."

Rietsche's advertisements now say 150 sheets an hour are made, with no brushing nor expense for lubricants; and, as you will recollect, the thinnest made is 1.35 square meters to the kilo, instead of 1.25, as above. The chief point to be noted in the foregoing is the manner of producing thin or thick sheets. Perhaps this has a bearing on your experience with the machine.

It just struck me that the largest size of press kept in stock (any size may be ordered) being 45x30 cm., hence a trifle longer one way than the L. size, which is 20x43 centimeters, there would seem to be no practical obstacles in the way of working a *double* L. size, 40x43, and cutting the sheets in two afterward. Then what would become of all your calculations? Whoopee!

But, really, in my case at least, I would lay very little stress one way or the other on the number worked per hour, within reasonable limits. It is that 41—25 = 16 cents per *pound* used that I want to get out of paying.

Montrose, Colo., Sept. 20.

[Perhaps our readers are already getting tired of this discussion; but we hope to have the truth come out, let it strike where it may.

Some of the things that friend Thompson has given favor my side, and some favor his own. So far as these last relate I will let them stand on their own merits. I simply desire to call attention to the fact that there seems to be a disagreement among those interested in the sale of the Rietsche press. The manufacturers themselves give rather indefinite figures as to how much per hour their press will make. For instance, in the article above they say that 150 sheets per hour are made; but there is no reference as to the *size* of the sheets. It is hardly fair to assume that a large sheet could be made as rapidly as a small one, as intimated in friend Thompson's next to the last paragraph; but I have found something definite myself from a dealer who sells Rietsche foundation-presses in Australia. His advertisement appears in the *Australian Bee Bul-*

three or four pounds per hour we can hardly figure on more than 20 or 25 lbs. as a day's work. Then the brittleness of the article after it was made would be somewhat against it.

Mr. Thompson is laboring under the disadvantage of having never used one of the Rietsche presses. If he will pay the cost of a late machine we will pay the cost of transportation; and I would suggest that further argument be deferred until such a time as he shall have actually tested the machine so that he will not have to depend upon what some one else says. My arguments all along have been based on our own experience with a Rietsche press. When we bought it our intention was to make some arrangement to put it on the market if it should prove to be a good thing.

If it shall yet turn out to be a great help to a certain class who can not afford to pay high



NIVER AND HIMSELF.—SEE EDITORIALS.

letin. In referring to the Rietsche press he says:

"Foundation may be made at a very slight cost of labor; capacity, 3 to 4 lbs. per hour."

This cuts the estimates down that friend T. has been making, just about a half; and I am more inclined to believe that this is actually the capacity of the machine, because these figures are just about what we were able to secure with the press we have. This advertisement appears in the August 24th issue, and doubtless referred to late machines.

If three or four pounds of foundation per hour is all that can be made from an L. sized Rietsche press, I can not by any combination of figures, allowing the operator \$2.00 a day for his time, see how any great saving could be effected over factory-made foundation. At

freight rates, let alone the cost of ordinary foundation, we as manufacturers of supplies would be very shortsighted if we did not supply such customers with these hand machines. I am open to conviction; and I believe friend Thompson is also, and that he will test the machine fairly, because his article above shows a spirit of fairness and a desire to get at the truth.—ED.]

VALUE OF CLEATED SEPARATORS.

Comb Honey "as Straight and Smooth on its Surface as a Planed Block of Wood."

BY JULIUS TOMLINSON.

I have just been reading your Oct. 15th issue, and was particularly interested in the

new separator you wrote so much about on page 741. According to my present light I think them a good thing, for I have tried them this season. I got my idea from R. C. Aikin (in *GLEANINGS* for April 15, '97, page 275), but I rejected his idea of supporting sections by little nails driven into the separators. Instead I floored my section-case with thin strips, scored out on the edges, for bee-spaces. The separators are $\frac{1}{8}$ in. thick, and the strips across the same are $\frac{1}{8}$ also, on each side. This keeps the sections just $\frac{3}{8}$ in. apart. The bottom and top of sections are $1\frac{1}{4}$ in. wide; up-rights of sections $1\frac{1}{2}$ in. wide, which gives a bee-space of $\frac{1}{4}$ inch between top and bottom of sections, and the honey in the section is just $1\frac{1}{4}$ in. thick, and exactly even with top and bottom pieces, and as straight and smooth on its surface as a planed block of wood. When crated, the combs are $\frac{1}{4}$ in. apart, and need no separators. I never had honey in nicer shape than in those sections. The floor in the case prevents the bees from coming in contact with the sections, and I think that, in another season, I shall cover the sections on the top also with thin bottom floor strips.

Instead of glue for fastening on strips I use small clinch-nails—such as are used for making peach-baskets—and with a suitable form it can be done quite rapidly by any boy or girl. Of course, it is some work to fix up section-cases this way, but not more than wide frames, and it is no trouble at all to take the sections from the cases. I have a way of my own for pressing the sections together in the cases, both endwise and sidewise. My section-case is a plain box halved together at the corners, and nailed both ways.

Allegan, Mich., Oct. 23.

[I had forgotten the fact that so good an authority as R. C. Aikin uses and recommends cleated separators when I wrote the article in our previous issue, page 741. As time goes on, I have no doubt we shall find that a larger number of bee-keepers than we had any idea of saw the advantage of cleated separators and made use of them.]

I notice that you emphasize the fact that this style of separator gives you comb honey "as straight and smooth on its surface as a planed block of wood." Why, it seems to me that any one who would think of using the old style of separator in preference to the new one would be simply shutting his eyes and throwing away his dollars—none so blind as they who will not see. I do not think or guess or theorize. The proof of the pudding is in the eating. The honey that has been produced by cleated separators speaks for itself. The sections are not only better filled out, but plumper, and, as I stated in our last issue, would grade at least one notch higher in the open market.

Well, it seems here is another man who also caught on to the advantage of this style of section, and we will let him speak for himself; and in the mean time we should like to hear from others who have been using the same or a similar device. Let us hear all the bad things about them as well as the good. —ED.]

HOW AND WHY THE NO-BEE-SPACE SECTION OF HONEY BRINGS A HIGHER PRICE.

Mr. Root:—Referring to editorial column, page 744, you speak of non-bee-space sections. I want to say that I heartily agree with you in all you say about the pleasing effect they *present* when looking at the face of the section. No one looks at section honey edgewise when buying, unless to see whether it is cleaned of propolis; consequently the section that is filled out to the edge, and evenly capped, no outside cells uncapped, which is so common with the bee-spaced section, is the kind of section honey that will sell ninety-nine times out of a hundred first—*every* time when sold by the section, even if the bee-spaced section did weigh a little heavier.

During the honey-flow this season my circumstances were of such a nature that I could not purchase such goods as were needed (caused by misfortunes in the past two years, over which I had no control); consequently, in order to procure the honey my bees would gather I was forced to plan some arrangement for surplus. After I had used all sections until others could be had, so I had a lot of brood-frames in the flat, they were put together and spaced with horizontal and perpendicular thin strips. Starters were put in and given to the bees, and were spaced to about $\frac{1}{16}$ inch; and, oh my! that was the loveliest sight of honey, when taken off, I ever saw. I do not believe there were a dozen uncapped cells in the entire lot. Every section was built out as even as a planed board; in fact, it was a solid block of honey.

A few days after this honey was taken off, a gentleman called for some honey; and while I was about to wrap up seven of my nicest filled sections, the gentleman spied those large frames, and was so fascinated by their appearance he exclaimed, "Say, Mr. G., is this honey for sale?"

"Yes, sir."

"How much have you like this?" pointing to a frame hanging up in my honey-room, "and the price?"

I said, "I think about 40 lbs., and 15 cts. per pound."

"Well, you needn't tie up those boxes. I'll take the 40 lbs."

Now, why did this gentleman buy that honey in preference to a dollar's worth of as nice bee-space-section honey as it's possible to produce by any apiarist? It was all white-clover honey. It was the pleasing appearance it presented by being built out even with the edge of the frame, and no uncapped cells, which always make a section look as if it contains more beeswax than honey.

Here is another observation proof in my method of manipulating bees (swarms), caging the queen, placing her in super, and hiving the swarm back, as stated in former articles. In preparing the cages I take a number of the one-piece sections, place them between two boards, and place them in the bench-wise; then with the plane I dress off the projecting edges. They are then put together, then each side is covered with wire cloth. Not having

enough sections to fill out a super, it occurred to me that I could fill out with the so prepared queen-cages, and I took off the wire cloth, and inserted eight of those dressed sections, slipping little strips between rows to give a bee-space, which answered the same as the slatted separator, never thinking what the result would be, more than to save the honey the bees would gather; but when I took that crate off I was so pleased with those eight sections that I said to myself, "Next year I'll fix 'em."

Those eight sections were all filled out even with the edge of the section, or so nearly so that two could be placed together and the two face surfaces would nearly touch together; and as I keep nice glassed cases of honey in our stores, those sections were placed in those cases with the other bee-spaced sections; but the eight non-bee-spaced were the first sold, and because they looked as though they contained more honey for 15 cts. than the others, and I am not so sure but they did; however, I did not think at the time to test them by weight.

So, Mr. Editor, should I live to manipulate bees through the season of 1898 I shall test this matter pretty thoroughly; also the drawn-foundation comb, of which we have read so much.

J. A. GOLDEN.

Reinerville, O., Oct. 23.



WINTER-PASSAGES IN COMBS NOT NECESSARY.

Question.—I see in one of my papers that one writer claims that old age can be set down as the reason for bees dying in winter without apparent cause, and asserts that the cause of the loss of many colonies lies in the fact that the same was composed mostly of old bees at the approach of cold weather. This may be the cause of some of the loss; but I think the loss is more often caused (where bees are wintered on their summer stands in the open air) from chill, or the impression from cold of those occupying outer ranges of comb, during sudden changes from warm to very cold weather. Especially is the loss very considerable from this source where the comb-passages are deficient, as they generally are where large frames are used; as in such case the detached clusters are unable to readily join the main cluster, and are not in sufficient numbers to maintain the requisite degree of heat, and are thus lost. Considering these facts, do you not think it well to make winter-passages through the combs, near the center, for the bees to pass through?

Answer.—The above brings up a subject which was discussed at length several years ago, when there was a "craze," as it were, for "winter-passageways" through the combs. The argument then brought forth was, that on the first cold spell the cluster of bees is

obliged to contract in order to maintain the necessary degree of heat required; and in doing so those occupying the outer ranges of comb, being in a sluggish state from the influence of the cold, failed to pass up and around the combs quick enough to keep up with the receding cluster, hence were left to perish with the cold. To obviate this loss, winter-passageways through the center of the combs were recommended, made by boring holes through them, or by having a curled shaving, which was painted on the inside, suspended in each frame when the swarm was hived, so that the bees would of themselves leave such passageways when constructing their combs. By this means the outer bees had direct communication with the cluster, so that, even though partly stiffened with the cold, they could easily recede so as to keep up with the main cluster. The painting of the inside of the shaving was said to keep the bees from building comb in these holes; but, notwithstanding, the bees would, as a rule, fill up these winter-passageways, each summer, which gave a good yield of honey, so it was found quite a job to see that they were open each fall. This led some one to propose boring a hole in the side of the hive, at the proper place, so that with a square stick, pointed at one end, which was to be slowly "wormed" (so as not to kill the bees) through to the opposite side of the hive, thus making a passage through all of the combs at one operation, thus making quite a saving as to labor. Many of my older hives have such a hole in the sides, with a button to turn over it when not in use; and where such passageways are desired, probably there is no better way of securing them than this last.

However, it was soon found that the bees would remain and die within half an inch of these holes in the combs; and as said holes were quite a damage to the combs (the bees filling them with comb having the drone size of cells the next season, or, if left open, it allowed a place for the bees to stay in when they were being brushed off for extracting or any other purpose), the making of such passageways has been generally given up, I believe. Some who still cling to the idea use what is known as the "Hill device" above the combs, as a sort of compromise; but after careful experiments with all of the above the writer has discarded the whole of them, believing there is not enough gained to compensate for the trouble. That the bees would die within an inch or less of such passageways, as spoken of above, and that such death of bees rarely occurred except during the first heavy freeze each fall, led me to investigate the matter closely, said investigation proving to my mind that these bees died from lack of vitality (or old age), rather than from the cause assigned. Usually we have much cool cloudy weather from two to four weeks before the first severe cold, so that old bees do not leave the hive to any extent to die, as they do all through the summer months, so that the number of dead bees dying from this cause would be considerable, providing none were chilled. But instead of dying at once, at this

time of the year, these old bees seem to linger along for a chance to get out of the hive to die, the same as they do at all times when they can fly freely, and so gather in little clusters of three, six, twelve, or more, in a place where they remain in a half-dormant state till caught by extreme cold, or a chance is offered for a flight.

I find, by referring to an old diary that was in writing at the time I was conducting experiments along this line, that one year, when a fine warm day occurred just before the first very cold weather, on which day the bees all flew finely, owing to their being confined to their hives from cool rainy weather for two weeks preceding, I found multitudes of sluggish bees clinging to the sides of the hives, on the grass, fences, etc., near the evening of that day. On touching them they had life enough to thrust out the sting, but none would fly or even crawl; and when the next morning came with a temperature of only 15 degrees above zero these bees were frozen stiff, remaining where they were the night before. This was a surprise to me, and I was led to believe, which belief still clings to me, that I had discovered the real cause of the trouble. A look into the hive after this cold wave had passed brought to light no dead bees on the combs as are usually found where the bees have no chance to fly for some time before the first extreme cold, and very few were found at any time during the winter, all getting clustered compactly for winter without passageways.

Then, again, I have often noticed that these little knots of bees were found, dead or otherwise, only with the first contraction of the cluster, as afterward no gain in dead bees between the outer ranges of combs was noticed with each expansion and contraction. Therefore I do not pay any attention to passageways for bees during winter at the present time.



DEEP-CELL, FOUNDATION TESTED BY EUGENE SECOR.

Mr. Root:—Last spring you sent me for trial six pieces of deep-cell foundation. They were about 2 inches wide, and long enough to reach from side to side of a $4\frac{1}{4} \times 4\frac{1}{4}$ section. I put these six pieces into two-inch-wide sections, and the sections in the center rows of a super covering an eight-frame hive. The remainder of the sections in the super had Vandeußen flat-bottom-foundation starters, about three-fourths full.

The super was put on a strong colony July 7, with the intention of catching the basswood flow, which was soon to open. But we got no honey from that source. The only resources left were the last days of white clover and the

fall flow. The sections were entered by the bees very slowly. I think the deep cells were first occupied, but the comb-building progressed simultaneously on the flat-bottom foundation just as fast as in the sections which contained the new-process foundation. When taken off, all the sections containing the deep-cell or drawn foundation were well filled, and all the other sections on *one side of the super*. On the other side, right up to the deep-cell sections, nothing whatever had been done.

Now for the mouth test. As I said, the pieces used were not to exceed 2 inches wide. The rest of the comb in the sections was built by the bees. I would cut a small mouthful from the top, and then one from the bottom of the section, and eat them alternately. If I had been blindfolded I could not have told one from the other. Others tested it in the same manner and with the same result. The lower part of the section was built with drone comb.

I find that the season and the abundance (or otherwise) of the flow of nectar has more to do with the thickness of the combs—in other words its “gobyness”—than the foundation, keeping in mind that only the thinnest foundation is fit for sections. The “waxiest” honey I ever ate was all the natural product of bees. I believe every observing bee-keeper has noticed the same thing.

Now, what of the future of this new-process foundation? I believe it is going to be a valuable thing for “bait” sections at least. What is puzzling me most is how to fasten the stuff in sections without melted wax. I don't remember to have seen your plan of putting it in described.

EUGENE SECOR.

Forest City, Ia.

THE NEW DRAWN FOUNDATION A DECIDED SUCCESS.

In the Oct. 1st issue of GLEANINGS you ask for testimonials as to the merits and demerits of the new drawn foundation. I must say that I used about 20 pieces of this foundation, using 2 pieces in most of the sections, as I believe in full sheets. I consider even this to be too small a scale to give it a thorough test. But, candidly, I do not hesitate to say that I think the new drawn process a big step in advance—so much so that I believe the comb-honey man can give an advance of 25 cts. per lb. in preference to buying the old style at 50 cts. I also desire to say that, in soliciting testimony in regard to the new drawn process, there has been an oversight in said testimony; viz., how much more is it worth per pound than what we have been using? Some who oppose it have said, “Too much of a gob of wax.” Let us see just a minute. Foundation that runs 10 ft. per lb. is what I have been using. I put this into the supers, and the bees proceed to draw it out. When it is drawn out to the same width as the new-process foundation, I find that both kinds are identically the same, and the same number of feet to the pound; consequently the same amount of “gob” in each.

I run for comb honey, and my neighbor runs for extracted. Why is it that he gets 2

lbs. to my one? Will some one who opposes the new drawn foundation answer this question? F. D. LOWE.

Rosedale, Cal., Oct. 8, 1897.

[While we are glad to get such reports, we do not want those who have had adverse experience to keep still. We have just as much room for one kind of testimony as the other. If *flat-base* deep-cell foundation shall prove to be a good thing in the majority of instances, what shall we say of the same product with *natural* base? This is what we expect to make; and, if we do not miss our calculations, we shall have it next season.—ED.]

A CHEAP HOME-MADE UNCAPPING-DEVICE.

Let me suggest a cappings-drainer that is inexpensive, and a complete success as we use it. I will commence to describe it from the bottom.

First a tin pan just large enough for an ordinary super to rest in.

The one we use is 4 inches deep, and provided with a screw-cap honey-gate. Set the super on it. Next take a tin-bound sheet of wire-strainer cloth, just large enough to drop inside the super and rest on the tin strips provided for the section-holders to rest on. Then we want a frame to rest on the top of the super (as on the Dadant can), to rest the comb on while uncapping.

Now we will uncup till our strainer cloth is covered to a sufficient depth, when we will lay on a shallow tin pan—say $\frac{1}{2}$ inch deep on one end and the sides, and at the other end enough deeper to give the pan quite a pitch

(the projection, you will notice, will hang in the rabbets at the end of the super). The pan has a $\frac{3}{4}$ -inch hole punched in it at "A."

Next put on another super with wire strainer, and continue your work, when the honey will drip through on the shallow pan, and, passing down to its lower end, will run through the hole "A" into the pan below. This, you see, can be carried on indefinitely, adding a shallow pan, super, and strainer, as needed, giving the maximum amount of strainer room at small cost, and in very compact form. The holes "A," you see, will come over each other if the precaution is taken to hang all the shallow pans the same way.

We were unable to get wire strainer on short notice, and for a makeshift made sieves of the ordinary window-curtain strips that would just fit inside the super, then stuck 4-ounce tacks $\frac{1}{2}$ inch apart all round the lower edges, wound twine around them, joining a warp the longer way, next wove it across by the aid of a wire hook; drove the tacks home on the string, and then covered the tack-heads with a $\frac{1}{4}$ -inch-stick strip. This makes a good substitute for the wire strainers, but is quite a job, and I imagine you could furnish the tin and wire strainers just as cheaply as these substitutes can be made.

I don't know that I have made the idea

clear. If you catch it I think you will see the utility of it, as it gives so much strainer surface with so little exposure of the cappings to flies or dust, and at so little expense to any one who already has the supers.

Emmetsburg, Ia.

J. C. BENNETT.

[I can't see the need of so many extra strainers and pans. One pan and strainer ought to be enough. Sufficient room for the cappings could be obtained by putting on extra supers.—ED.]

THOSE NAUGHTY FARMER BEE-KEEPERS; AN EXPERIENCE DIFFERENT FROM ABBOTT'S.

Dr. Miller, in *Straws* for Oct. 1, asks all those who have had to sell their comb honey at low prices on account of farmers and small bee-keepers bringing in their sickly-looking honey, to hold up their hand. Here is mine. Mr. Abbott's friends are not the kind I am looking for. Those farmer bee-keepers who put on sections one year and take them off the year following, and then take them to town and sell for what they can get, are surely enemies to the bee-keeper who tries to produce only a first-class article. It not only lowers prices for the good honey, but I have found some stores that will not handle honey, because they had got some of this leaky honey, and it ran all over their showcases, and smeared every thing up, and only a bee-keeper of experience knows it is not very easy to clean it up; and this is enough to put almost any store against handling honey at a small profit. I have sold all my honey at 10 cts., nice comb honey at that; but this is better than shipping to commission houses and receiving 7 or 8 cts. per lb. for it. My crop was about 2000 lbs. this year—about half clover and heartsease. Sweet clover did not yield much this year, as it was pastured too closely.

G. E. NELSON.

Bishop Hill, Ill., Oct. 15.

OVERSTOCKING IN YORK STATE.

Mr. E. R. Root.—In your editorial on page 672, under the heading "What I saw in York State," you give us to understand that the portion of the State visited by you seemed to be overstocked with bees, which is undoubtedly true; but in this part of the State just the opposite is true. To illustrate: In driving recently a distance of twenty miles from my place, and the same back, by another road, I think I did not pass more than a dozen hives, and they were box hives. The trip was near the St. Lawrence River and Thousand Isles, where honey has retailed at from $12\frac{1}{2}$ to 18 cts. per 1-lb. section. I have wholesaled extracted honey in this market this season at not less than 40 cts. per quart, including can. I bought the honey of The A. I. Root Co. You may conclude that bees do not do well here; but a woman living near tells me that she had one colony increase to nine, in a single season, by natural swarming.

I keep only a few bees, but have taken $128\frac{1}{4} \times 4\frac{1}{4}$ sections from a single hive in a season, and allowed them to cast one swarm. In

the same year, 1893, 10 colonies increased to 28, and gave 983 sections of surplus. This year five colonies have increased to 13, and given about 400 sections. I believe there are excellent localities here for the location of apiaries, and will answer inquiries from any one interested who will inclose a stamp.

J. F. PETRIE.

Plessis, Jeff. Co., N. Y., Oct. 6.

GENERAL MANAGER SECOR'S STATEMENT TO
THE DEPARTMENT OF AGRICULTURE.

Mr. Root:—I noticed in last GLEANINGS that you had written to Wedderburn, of the Department of Agriculture, in reference to food adulteration and a remedy therefor. That puts me in mind of a letter that I addressed to the same person Oct. 15th, a copy of which I inclose herewith.

I learned somehow that the Agricultural Department was taking up this subject of food adulterations, and I addressed the above-mentioned letter for the purpose of opening correspondence, and to learn what we could do as a society in bringing about reforms through the cooperation of the Department. It was my thought that, if the Department is making a chemical study of honeys, we might get specimens analyzed free of cost. I have not yet received a reply to the inclosed letter; but if I do, and it is favorable, I shall follow it up.

This is simply to let you know that I am not indifferent to the interests of the Union.

EUGENE SECOR.

Forest City, Iowa, Oct. 20.

A. J. Wedderburn, Chemical Division Dep't of Agriculture, Washington, D. C.

Dear Sir:—I am informed that you are making special investigations as to the extent and character of the adulteration of foods in this country. The association named at the head of this letter, and which I represent, is especially interested in measures to prevent the adulteration of honey—more specifically, extracted honey. I should be glad to receive your cooperation in ascertaining to what extent extracted honey is adulterated, as found in the markets of the cities.

It is our hope to obtain legislation wherever needed in States, or, what we would think much better, by Congress, in the interest of pure food. We fear that there is a good deal of adulteration of the honey product by the admixture of glucose, which is probably the only adulterant that would make it profitable.

If, in your investigations, you are authorized to take up the subject of honey, I should be glad to correspond with you further in regard to it.

Yours truly,

EUGENE SECOR.

Forest City, Ia, Oct. 15.

recommend disposing of one's bees in one's own locality if possible.

P. D. S., Ohio.—I think you will be able to have your queens fertilized this season. The drones will be present for some little time yet. Queens not fertilized this fall will stand a good chance of mating next spring.

E. F. T., Mich.—Candidly, I doubt very much whether it would pay you to put any ointment or cure for bee-stings upon the market. Most bee-keepers care very little for the stings. The best thing I know of is to remove the sting and then grin and bear it. The more one tries to doctor up the stings the worse he usually makes them.

C. O., Wis.—Replying to your inquiry of a late date I would state that I would not pay over \$2.00 for a colony of hybrid bees in a box hive. Such colonies have been bought many and many a time for from \$1.00 to \$1.50. Nowadays the hive, if of modern construction, should be worth at least as much as the bees. A box hive is worth practically nothing. For transferring, see instructions given on page 32 of our catalog.

W. I. H., S. C.—By white pine I mean lumber from pine-trees in the North. The pine of the South is apt to be pitchy, and is much heavier per square foot than the pine of the North. I recommend white pine because it is easier to work, easier to handle, and much lighter to lift. Of course, the heart part of these southern or northern pines is better than the lumber on either side of the heart.

W. M. P., Ohio.—I should be inclined to think from your letter that the bees had something in the hive which they regarded as a queen. It may be a fertile worker, it may be a virgin queen, or it may be a laying queen which is so small and dark that you would not be able to recognize her. I would not advise you to give this colony to another hive of bees. Give it a frame of eggs and brood if you can find any in your apiary. If they build cells you may know they are queenless. In that event I would advise you to unite them with another colony. Cage the queen, before introducing her, in the regular way. The main thing is to make sure the colony is queenless before attempting to unite; and if they build cells before giving them larvæ or eggs, then that settles it.

J. W. S., Ky.—It is so late now (Oct. 14) that I would not advise you to transfer by the short method described in our catalog. You'd better use the old method, or the one that involves cutting out the combs of honey and brood, and fitting them into the brood-frames themselves. Of course, you would need to pull apart the old box hive, or whatever they happen to be in. For directions in regard to this method of transferring, see any of the text-books, and especially our A B C of Bee Culture.

Bees will build combs at this time of year—that is, providing you give them frames of foundation wired, and feed them; but the weather needs to be warm, and you should have had some previous experience in feeding



L. F. H., Pa.—I can not tell you whether the blossoms of the coffee-tree of commerce yield honey or not. Can any of our subscribers give us any information in regard to this?

S. K., N. Y.—I would advise you to advertise your bees in some local paper. On account of the express charges, and the difficulty of transporting to a distance alive, we

bees. Perhaps, taking it all in all, it would be better for you to wait till next spring before you transfer. If you do not change to the other hive, you would need to make sure that the old one has stores enough to carry it over till next spring.



ON the afternoon of the 24th of October there arrived at the home of the editor of the *American Bee Journal* a beautiful baby girl. Both mother and daughter seem to be doing well. We extend to Bro. York our heartiest congratulations. Give the baby a kiss for us Medinaites.

THE writer or editor who furnishes the matter for "Beedom Boiled Down," in the *American Bee Journal*, is doing some good work. The items are not only carefully sifted, but clearly and forcibly put. I think I recognize, not the handwriting, but the earmarks of the writer.

INFORMATION has come to us that J. H. Martin, so well and favorably known to our readers, is now very sick. We hope the report is either not true or else that our friend the Rambler has passed the danger-point. J. H. Martin was first heard of in York State. He then became known to the bee-keeping world as an inventive genius. Later on he began rambling through the East for



J. H. MARTIN.

GLEANINGS, and his articles appeared in these columns. His rambles among bee-keepers extended finally across the continent to California. Later on a serial story, so fresh to all our readers, came forth from his pen.

NIVER AND HIMSELF.

AMONG the bee-men whom I met recently in York State was S. A. Niver, to whom I have already referred as being the chap who had a tongue that was "balanced in the middle." Well, with this facile tongue he knows how to sell honey, and get bigger prices, I am told, than almost any one else, even selling the same goods. Mr. Niver generally styles himself "Morton's brother-in-law." Morton, you know, is the *bee-keeper*, that inventive genius to whom I have already referred, and it is he who *produces* the honey. It is Niver who *sells* the goods.

It is with peculiar pleasure that I introduce to you in another column "S. A. Niver and himself." Among Niver's other accomplishments is guitar-playing; and the picture elsewhere shows him not only playing the guitar

but looking at himself in another chair. In other words, Mr. Niver appears to be one of those remarkable chaps who are able to do two things at once—sit in two places at a time—that is to say, in this case at least, is able to assume the *role* of beginner in guitar-playing and instructor in the same art at one and the same time.

I need hardly say this is accomplished by a trick in photography. Two "exposures" are taken on the same plate. When the first sitting is taken the negative in the camera is covered with black paper, just half way; then an exposure is taken on the uncovered end. A second exposure is then made, but the other end of the negative is then covered.

Mr. Niver, besides being a glib salesman, is a real fun-maker. To illustrate: At one of the county bee-keepers' conventions which I attended, while we were enjoying the picnic dinner a certain young man had just delivered a "drive" on his friend Niver. Quick as flash, Mr. Niver, with eyes beaming with earnest sympathy, turned about and said to the rest of us in a confidential tone, "Oh, yes! Harry is an awful good boy. He has only one fault. When he eats pie he *will* muss his ears;" and Harry was eating pie just then. Of course, this raised a roar of laughter.

FOUL BROOD INCREASING IN THIS COUNTRY.

WE are receiving, almost daily, suspected samples of brood which we are requested to diagnose. In nine cases out of ten they prove to be foul brood. To-day (Oct. 20) I opened a sample of one of the worst cases I have ever seen. The odor from a colony affected would be sufficiently strong, I think, so that it could be detected several yards from the apiary. At all events, it was the "loudest"-smelling sample I ever came across. This almost daily receipt of samples of affected brood from all parts of the country is alarming.

I have already found where this disease is making headway in portions of the United States that have more colonies and more bee-keepers to the square mile, I believe, than any other place in this country. In fact, the disease is apparently starting up all over the land, and it will need some vigorous measures and some good legislation to keep the disease in check. I would suggest that, in those States where there is no foul-brood law, bee-keepers send in a big petition to their next general assembly, asking for the needed legislation.

A foul-brood inspector (N. E. France, of Platteville, Wis.) has been appointed for Wisconsin. A law was recently enacted; and with the State back of him the inspector proposes to make a clean sweep of the State.

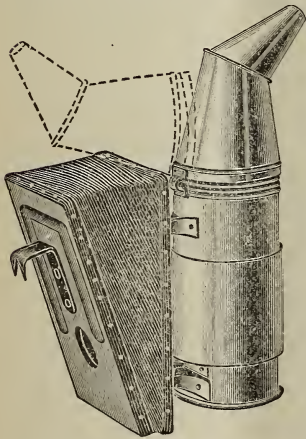
The good work done by foul-brood inspector McEvoy, of Canada, is too well known to need mention, and now the Canadian bee-keepers are practically masters of the disease.

We on this side of the line can not afford to let it get the start of us. Our catalog, our A B C book, and, in fact, nearly all of the text-books on apiculture, give good methods of treating the disease.

In the mean time, let the friends continue to send in samples of foul brood securely wrapped in paraffine or greased paper, and packed in a tin box. A wooden box securely nailed, and water-tight, will answer in lieu of a tin box if that can not be obtained.

A SMOKER-HOOK—A COUPLE OF COGGSHALL'S IDEAS.

WHEN I was at W. L. Coggs's he showed me the convenience of having a hook placed on the back of a smoker in such a way that the smoker could be caught on to the edge of the hive while the operator is at work over it. Mr. C. explained that it was a waste of time to have to stoop down to the ground to pick up a smoker that, in nine cases out of ten, would be tumbled over on its side, and burning at a very low ebb. He would have a smoker within a few inches of the hand, "right side up with care," and the draft fully on. The hook is a piece of strap iron, bent in the form shown, and fastened to the top of the smoker-bellows. The cut below shows the idea:



Another valuable feature of the hook is that it may be hitched on to the "apiary-cart." Mr. Coggs has a sort of hand-cart that will hold four extracting-supers full of combs. This is within arm's reach. Then having the smoker shoved along from one hive to another; and while the operator

is at work it stands attached to the top edge of the hive or of the cart, up in the air, it can be seen anywhere in the apiary.

Many and many a time I have lost track of my smoker; and in order to find it I have had to peer around all the hives, and finally succeeded in locating it on its side in an obscure place, half gone out. I do not know but we shall have to supply our smokers with hooks next year. They would be put inside the fire-cup, and the bee-keeper can attach them or not as he chooses. Those who already have old smokers can make hooks and put them on this winter.

Incidentally it will be noted that the smoker bellows-boards above illustrated are grooved around the sides and top edge. The purpose of this groove, as I have before explained, is to enable the operator to get a better grip on the smoker. When the fingers are wet with perspiration or honey, sometimes the smoker will slip out of the hand. But this groove entirely prevents it. It will be remembered that Mr. Coggs some time ago recommended cleats; but it seemed to be better and far neater to

have grooves; and these we have put on all our late-made smokers.

A BEE-HUNT AT MEDINA.

DID YOU ever go out on a genuine bee-hunt—the good old-fashioned kind that our fathers and grandfathers used to tell us about? About a year ago, hearing that a bee-tree had been discovered a mile or more east of Medina, I determined that I would have some of the fun I had heard so much about. Two or three of our shop boys were invited to go along. No, come to think about it they invited *me*. Implements? Yes, we had lots of them—axes, a large crosscut saw, veils, dippers to dip up the gallons (?) of honey; smokers, honey-knives, and every thing else galore, besides a horse and wagon. The horse was warranted to be sting-proof, and not to run away.

We had previously obtained the consent of the owner of the tree to cut it, and the afternoon was "just lovely." Two of the boys went crosslots on foot, taking along a gun, while the rest of us rode. For fear that I might miss an opportunity of getting a fox squirrel I took along my double-barreled hammerless; and that I might be able to preserve in permanent form some of the exciting incidents of the bee-hunt, I took the camera that makes many of the pictures for GLEANINGS. Arrived at the bee-tree, the boys pointed out where the bees were located. I squinted and looked, and looked and squinted, but could not satisfy myself that there were any bees in that tree. As my shotgun was conveniently near I thought of a little scheme. I would fire at the place where the bees were supposed to come out. Perhaps that would stir them up, and it did; but—"Whewation, boys! see that big fox squirrel!" I shouted. I was seized with the "buck-fever," and never once thought of letting him have the other barrel till too late. The squirrel seemed to me to jump from the very hole where the bees were. I had expected bees, but not game. Well, as he disappeared in another tree we pursued after him. My shot had called the other man, and we together went squirrel-hunting, leaving the bees to make things interesting for the other fellows. After we had hunted a while we came to the conclusion that Mr. Fox had found another convenient hole. We gave up the search, and came back to the bee-tree.

Two of the men—one of them Mr. Dannley, who makes the foundation-rolls, and the other one Mr. Hammer, who has been working on the Weed deep-cell dies—were at work sawing the bee-tree down. I laid the gun aside, took up the camera, and took a "time exposure."

Perhaps some of you do not know how our Ohio woods look in the month of September. Elsewhere in this journal you will see the bee-tree, and just at the foot of it the two men with the crosscut saw. The place where the bees were located was just above the crotch of a limb broken off very near the top of the picture, on the left-hand side of the tree.

We all took turns with the saw and with the ax. Some of us were not very expert with the last-named implement. I noticed that, while I chopped, the rest of the crowd departed to a

distance. Notwithstanding this, between us the tree began to show evidences of falling. Anticipating a big skirmish when it should fall, we put on our veils and lighted the smoker. A few more blows of the ax, and the monarch of the woods began to totter and fall. Down it came with a *cr-rash!* It was a little lively around the knot-hole where the bees were coming out; but after we began chopping and sawing again to get at the heart of the tree where the bees were, they quieted down.

Just about this time we heard the chattering voices of schoolchildren echoing in a distant part of the woods. In a few moments more, greatly to our surprise we found ourselves surrounded by a whole school of children, who, hearing that we were going to cut down a beehive, had come to see the "fun." The schoolma'am, who was doubtless equally anxious to see some of the same sport, readily consented to dismiss school at an earlier hour. The bees had now quieted down, and the children became bold enough to cluster around the log where we were at work trying to scoop out the bees and honey (?) with a dipper. There were combs in plenty, but little honey.

Just about as we had finished our task and passed around several hunks of the delicious morsel to the owners of eager eyes and hungry mouths, I set up the camera again and took another shot. In another view elsewhere you will find the result. The most remarkable thing about the whole picture is that the children are bareheaded, barearmed, and in some cases barefooted, while *we professionals* had veils on and smokers in our hands to prevent getting stung. I did not realize the incongruity of the situation till too late. Then with as much grace and ceremony as I could command I offered my veil to the prepossessing schoolma'am. But this she kindly declined. I then offered it to some of the older girls, but with a like result.

Did any of the children get stung? Only one of the boys, I believe, who, while astride the log, looking into the cavity, happened to sit upon an unlucky bee. We all knew the *precise* moment when the sting pierced his pants, you may be sure.

The significant fact is, that those of us who wore veils were stung more than the children, and the reason is very evident. When bees are demoralized by pounding, as by the chopping open of their cavity, they seem to lose all desire to fly and sting. They just crawl and crawl, and crawl up under the veil, and, failing to get out, sting.

Some little time ago a lady wrote a story which was submitted to us for consideration, on the subject of bee-hunting. She went on to state in this story how angry the bees became while the tree was being cut open; how they took possession of the land for miles around; how it was not safe for man, boy, donkey, or chicken to be anywhere near that vicinity, and how cross the bees were for days afterward. When I had finished reading that story I came to the conclusion that *that* writer had never had any experience in bee-hunting.

Did our bee-hunting experience pay in bees

and honey? Well, hardly. All the honey we secured was eaten by the aforesaid schoolchildren; and the bees—well, there were about enough to cover perhaps two combs, and before winter they simply died. That they would have died anyhow from lack of stores had they been left in the tree relieved our consciences a little. But in experience and "piles of fun," as the boys said, we were repaid richly.

THE NEW STYLE OF SEPARATOR AND SECTION; THEIR IMPORTANCE.

SINCE the pages of "Stray Straws" were "made up" we have received another Straw from Dr. Miller, which, in order to get in this issue, I insert right here:

THE NEW PLAN of sections and separators, as mentioned, p. 744, has interested me more profoundly than any new thing in bee-keeping for some time. I've hardly settled down to a fixed opinion yet, but I am thoroughly interested. A principal question with me is that of cost.

It is evident that the doctor, at the time he sent the Straws, hardly knew what estimate to put on the new devices; but the more time he has had to think of it, the more "profoundly interested" he has become, and I think this will be the experience of thousands of others.

The doctor need have no fears as to cost. The separators are all made of scrap that has heretofore been burned; and as to putting the pieces together, that will be done by means of automatic machinery in the factory before the separators are sent out.

The reader will be interested to note what Julius Tomlinson, J. A. Golden, and A. I. R. say in this issue regarding these same things. Of late years our senior editor has somewhat lost his interest in bees, or, at least, has been compelled to turn his attention to other matters; but when I showed him the new style of separator and section, and explained their merits, his face fairly glowed with enthusiasm. He was also "profoundly interested," as will be evident by what he says elsewhere.

I do not know but I may be mistaken; but I believe the introduction of the new separator and section will be a great step in advance, and that the time will come when other styles of sections and separators will be largely superseded. The fellow that doesn't get "in the swim" next year will be the "worse" by a cent or two per pound for his comb honey, I fear.

ANOTHER BEE-BOOK FROM THE DEPARTMENT OF AGRICULTURE.

"BEE-KEEPING" is the title of another bulletin from the United States Department of Agriculture, by Frank Benton, Assistant Entomologist, that has just been issued at the government printing-office. It contains 32 pages the size of this, is printed in bold, clear-faced type, and is illustrated with suitable engravings. When the other bulletin was issued, the supply was exhausted in a very short time, and it became necessary to charge a small price in order to prevent the edition from being entirely exhausted. But it seems

that, since that time, there have been frequent inquiries for information on matters pertaining to bee culture, and accordingly another more abridged book has been issued, and it is reasonable to suppose that this time the supply will be equal to the demand. The Entomologist, Mr. Howard, says: "Though it has been designed by the author primarily to answer a few of the specific questions which are most likely to present themselves to the mind of the inquirer wholly unfamiliar with the subject, the aim has also been to introduce in the treatment of the various topics information which it is hoped will lead many of longer experience to more successful methods than they have yet practiced."

The book, although brief, seems to be a complete text-book on apiculture; and as such I have no doubt it covers the subject in an admirable manner. The contents, as given on the first inside page, are as follows:

Locations, suited to the keeping of bees; returns to be expected; all can learn to handle bees; to avoid stings; hive to adopt; swarming; dequeening; requeening; space near entrances; selection in breeding; special crops for honey not profitable; plants and trees for honey and pollen; to obtain surplus honey and wax; comb honey; grading and shipping comb honey; production of wax; wintering; general considerations; loss of bees through disease and enemies.

As I understand it, this work will be sent free to any who will apply for it. Make your request to the Department of Agriculture, Washington, D. C., asking for Farmers' Bulletin, No. 59, entitled "Bee-keeping."

THE ILLUSTRATIONS IN THIS ISSUE.

THE reader can scarcely fail to note the wealth of illustrations in this number, both in variety and in general excellence. Some of these pictures I took myself, and it is with peculiar pride that I show our readers some of *my own* work.

On my eastern trip last summer among bee-keepers I took a large number of photos with my large-sized folding Kodak. Some of the pictures I have already given, and there are quite a large number more that I expect to present later on.

Did you ever think that a picture will very often give to the reader in a moment of time information that it would require pages and pages of descriptive matter? Perfection in modern photography and half-tone engraving enables modern progressive journals to give their readers not only delight but real information, without the medium of a single word of language. I expect to show in next issue why honey in no-bee-way sections looks better.

A NEW IDEA — NOT GRADING-RULES, BUT PICTURES TO SHOW EACH SEPARATE GRADE AS IT SHOULD BE.

An idea has occurred to me in the matter of grading honey, and it is this: Let there be a committee appointed by the next U. S. B. K. U. meeting to make one, two, three, or four grades of honey from some lots that may be

brought in by the bee-keepers, or that may be purchased in the open market. They are to pick out, say, four representative sections that they would call "Fancy," and put them in a lot by themselves; four other sections that they would call "No. 1," and still four more that they would call "No. 2." Each section in the several groups should present as much variation as the grade itself will allow. That is to say, sections in the No. 1 grade, for instance, can't all be alike or equally good; but the picture of No. 1 should show the *limits*.

Now let there be a photo taken of each of the lots, "life size," said photos reproduced in half-tone, and printed on neat cards, each card to be labeled "Fancy," "No. 1," or "No. 2," respectively.

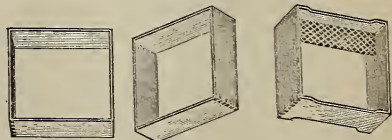
You see the point. A picture will describe at a mere glance what a body of bee-keeping experts would regard as extra fancy, as No. 1, No. 2, and so on. The trouble with the ordinary grading-rules is that *language* is not adequate to describe the limits of fancy, No. 1, etc., and hence arise the confusion and general dissatisfaction.

This suggestion came to me while I was at the apiary of Miles Morton, in York State. His brother-in-law, Mr. Niver, showed me how he would grade his honey, and placed the sections in four different lots. Of these I have secured a nice photo, and Mr. Niver will, later on, be able to show you just how *he* grades honey.

THE EVOLUTION OF THE SECTION HONEY-BOX; THE PROBLEM OF LETTING THE BEES IN AND LETTING THEM OUT.

I THINK I have heard of a religious sect, or perhaps it was a sect without any religion, who placed *man* at the head of creation—not only at the head of things earthly, but at the head of the universe, ruling out God. Well, there is considerable to admire about humanity, I admit; but, oh dear me! if I were to accept the doctrine that man is the highest order of intelligence to be found in this whole wide universe—well, it certainly would be awfully sad. In fact, I have sometimes thought that, if a premium were offered for stupidity and bungling, humanity at its best might take the prize from all animal kind.

The above reflections were suggested when the boys showed me an improved honey-box or section. What do you suppose it was? Why, it was a little square frame, as shown in the picture below—the one that is smooth and level all around, without any openings for the bees, or any thing of the sort. The first



THE OLD AND THE NEW 1-POUND SECTIONS. honey-section I ever made (8 to fit into a Langstroth frame) was of this description. You will find a picture of it on the front cover of GLEANINGS for September, 1876. We

already had foundation to get the bees to build their comb true inside of the sections; but, of course, a honey-box must give the bees access. I at first decided to move my wide frames, each one holding eight of these sections, a little way apart so the bees could get in all around; and, in fact, our first section was a brood-comb full of sealed honey composed of eight little frames so they could be taken apart and sold. In a little while we had sections touching each other, or closed, at the sides, but open at the top and bottom. Doolittle and Capt. Hetherington first used this style, if I am correct. Some of them had simply a narrow bottom-bar, and were closed all the rest of the way round. Finally the bee-keepers of the world settled down on a section closed at the sides but open top and bottom; and for nearly twenty years these have filled our markets, or something similar. It is true that some inventive geniuses (Danz-enbaker among them) made sections not touching each other the *whole* length of their perpendicular sides; and in this manner they secured sections of honey without little holes being left in the corners.

Separators were *long ago* decided to be a necessity. Then somebody said they were *not* a necessity. Then we came back to separators. We had them of tin, wooden veneer, wire cloth, perforated metal, and perforated wood; and the shapes and forms were so great and curious that a volume might be written in regard to separators. I do not know but we had the separator figured below.



A WOODEN SEPARATOR MADE OF SLATS.

This separator is made of thin strips of bass-wood, polished and sandpapered. It has panels in each side like a portable fence. In fact, I believe the boys have decided to call it the "fence" because it is a shorter word than separator. The openings in this separator are in width about the same as in the perforated zinc. The up-and-down slats on each side of the separator are also of about the thickness of these perforations, or $\frac{1}{8}$ of an inch. This fence is made very accurate by means of ingenious and perfect machinery. When the smooth planed sections are put into the cases, this separator brings every thing to a small fraction of an inch just where it ought to be. There is very little scraping or cleaning to be done. The box is smooth all round. In fact, you can sandpaper its edges after it is filled with honey, without much danger of injury. When the sections are packed up for shipment, the honey in one section never bumps that in the next one, for they are exactly alike; and yet they pack up so close and solid when crated for shipment that each cake of honey almost touches the honey surface of its neighbor. There is no waste of room.

Let us now go back to my starting-point.

After twenty years of studying and experimenting, trying devices not only sufficient to fill the Patent Office buildings, but after having made experiments so varied that great volumes would be needed to record them, we come back to the place where we started. These experiments in this research were not made by only a few persons, but *thousands* have studied over the problem for years, and racked their brains far into the small hours of the night; and yet it would seem just now as if it had amounted to almost nothing—at least, my impression is, after having seen the honey in these simple sections, and after having looked over the apparatus for producing it, that it must very soon take the place of all other styles of sections.

Now, I know full well, dear friends, that this style of section is not new. In fact, I said so at the outset; and, so far as the separator is concerned, a good many bee-keepers—our good friend Oliver Foster prominently among them—have used and advised a separator almost like this one.

As I grow older, and look back, I am reminded that this queer experience in bee culture is not an isolated case. Electricity furnishes many such examples. Forty years ago we were very near electric locomotion. When your humble servant, *more* than forty years ago, traveled from town to town exhibiting an electric motor, he predicted to the good people who came out to hear him talk, that, in a very short time, electricity would supersede steam as a means of travel. His prediction looks *now* as if it might come true. But he had to wait over *twoscore years* before inventive genius got round to it. Shall we be disheartened? God forbid. Let us, rather, roll up our sleeves and do the best we can. Blundering keeps us busy; and if we do it with the love of God in our hearts it *makes us happy*; and in *due time* we *shall reap if—we* faint not.
A. I. R.

THE SENECA COUNTY BEE-KEEPERS' PICNIC AND BEE CONVENTION.

AMONG the counties where bee-keeping flourishes, and where honey is produced by the ton and by the carload, is Seneca Co., lying between the beautiful lakes of Seneca and Cayuga—two lakes whose length is about forty miles, with width ranging from three to five. It is in this section of country, especially along the shores of these lakes, where immense quantities of beautiful fruit are produced, and bees and bee-keepers—they are almost as thick as the fruit-men.

Along in August I received an invitation from the secretary of the Seneca Co. Bee-keepers' Association, Mr. C. B. Howard, to be with them at their next meeting at Elm Beach Park. If I would promise to come they would arrange the date to suit my convenience. As I was going through that part of the State I very gladly availed myself of the pleasure of meeting so many York State Bee-keepers all together. Accordingly, on the 31st day of August I met them, as per appointment, at Elm Beach Park, on the shores of Seneca Lake.

Owing to some bungling on the part of the

railroad company, my bicycle had been carried in a baggage-car past my destination; and when I arrived at Romulus, the nearest railroad station, some seven miles distant, I was without means of getting to the bee-keepers' picnic in time. A horse would be too slow. I finally hunted around and found a blacksmith who was working for Mr. Howard's father-in-law, who knew that I was going to that picnic. I was afraid that I could not identify myself satisfactorily; but he accepted my story, and told me to take his wheel, and welcome. With this I managed to get down to the picnic grounds in time to meet the bee-keepers, but not in time to enjoy their bounteous dinner. Arriving there, the president, Fred S. Emens, introduced me, all sweat and out of breath, to the company there assembled, and then added that I was expected to take up the rest of the time of the convention, after which we would take a little ride on a steam-yacht that would be at the landing ready for us.

I will not attempt to repeat what I did or

Mr. E. R. Root:—I find there are some faces which are not familiar to me, but will give you the names of those that I know, and will make an X for those that I can not recognize. I will commence at the tree on the back row. B. E. Bradley, Henry Hamilton, Mrs. T. T. Covert, M. W. Abbott, Mrs. Abbott, Mr. Sutton, Matt Sutton, W. F. Marks, Mr. Emens, J. B. Whiting, D. H. Townsend, Miss Townsend, Mrs. White.

Row 2.—Mr. Perry, Mrs. J. C. Howard, Mrs. Sutton, Miss Sutton, Mrs. C. A. Munson, Mrs. Asa Slack, X, Henry Mauger, Chas. Baldrige, vice-pres.; Geo. B. Lamoreaux, J. W. Newman, Mrs. Newman.

Row 3.—Joe Haney, Mrs. W. E. D. Gibson, M. T. Williamson, Mrs. Bailey, X, X, X.

J. C. Howard, Mrs. C. J. Baldrige, D. R. Ambrose, Wm. Gilland.

Row 4.—B. F. Howard, H. S. Lyke, Asa Slack, C. B. Howard, Sec. and Treas.; Fred S. Emens, Pres.; B. D. Scott, Mrs. C. B. Howard, Mrs. B. D. Scott, Parker Brown, Ira Wilson.

Although there are shown only about sixty bee-keepers, if my memory serves me correctly there were something like a hundred present. When I got ready to take the picture, some had gone home.

It seems a little strange to us Westerners that single counties in York State could muster up more bee-keepers and more enthusiasm



THE SENECA COUNTY (N. Y.) BEE-KEEPERS' CONVENTION.

did not say to the bee-keepers that day relative to bees; but after the convention adjourned I craved the privilege of taking a photo of the company, and the result is shown herewith.

The president, Mr. Emens, with a section of honey in his hand, sits at the front; and Mr. Howard, the secretary, sits at his right, holding his four-year-old in his lap. At the left of Mr. Emens is Mr. B. D. Scott. A few days later, having lost my way, and seeing some bees across the roadway I decided to call and make some inquiries, never dreaming I should ever meet any one who knew me. A pleasant voice from around the corner of the house called out, "How do you do, Mr. Root?" This proved to be none other than Mrs. B. D. Scott, whom I had met a few days before. After looking over the beautiful honey and making a very short stay, I was directed on my way. But, to return.

I am not able to give you a list of the bee-keepers, and so I asked the secretary to furnish me their names. Here is a partial list, given me as he could remember them:

and more honey than whole States in the western and central parts of the country; but such seems to be the fact.

Ontario, bordering on the north-east, is another county that has now an international reputation from the fact that its county association, through one of its active members, Mr. W. F. Marks, also present at the convention shown above, first began the agitation in favor of *Apis dorsata*. You will remember that a resolution was passed, urging the general government to secure an importation of these bees. A request was also made of the North American, asking that association to pass a similar resolution. A full history of the whole matter is given on page 672. Well, Ontario also produces its tons of honey. Tompkins Co. produces more, if any thing, than either Ontario or Seneca. Then there are other counties like Onondaga, Otsego, Schoharie, and Albany that produce as much as some of their sister counties, but I shall have more to say concerning these and other counties at another time.



A VISIT TO THE OIL-REGIONS NEAR WASHINGTON, PA.

I have always been interested, not only in wells for water, but in wells that produce oil, gas, or, in fact, any thing connected with the development and bringing into use of any of God's gifts that have been stored away for ages under the surface of the earth. When I found the following in the midst of a business letter, you may readily imagine I was somewhat interested:

Friend Root:—If you do not have sufficient excitement in Medina, come down to my place and I will take you all over the oil-fields, and show you the new wells. We have one here that has produced 90,000 barrels in about ninety days, and it is close to some of my property. H. W. VANKIRK.
Washington, Pa., Aug. 19.

Soon after receiving the above I took the train at our place, and reached Bridgeport between one and two in the afternoon. Notwithstanding I have lived all my life so near Wheeling, W. Va., I never before had caught a glimpse of the beautiful bridges that there span the Ohio River. May be the circumstances and surroundings had something to do with it; but it seemed to me then that that beautiful suspension bridge surpassed in grandeur and sublimity any similar structure I had ever seen at Niagara Falls or anywhere else; and while I was wondering whether it was really a paying transaction to make such a magnificent structure just to get across the Ohio River, I was reminded by a man at the entrance of the bridge that I had not paid my toll. How much do you suppose it was for going across? Just *one cent!* At the other end of the bridge you pay another cent to get off. But there are really two bridges. The first one strikes the island on which is part of the city of Wheeling; and then another bridge goes from the island over the main part of the river. At the St. Louis bridge, you may remember, I paid ten cents for going over with my wheel, whether I walked beside it or rode, the same price as for any other "vehicle."

When I got over to Wheeling I found myself on part of the same national pike that I described while going through Belmont Co. It runs over into West Virginia, and through to Washington, Pa. Others as well as myself enjoy riding over this beautiful national pike, for I found wheelmen and wheelwomen going and coming almost constantly. On this pike through West Virginia and Pennsylvania the L. A. W. have put up mile-posts at the end of every mile. This gives you information in regard to distances both ways to and from the prominent towns. Not only that, where there is a hill at all dangerous a conspicuous board neatly painted is put up as a caution to wheelmen. I think it reads something like this. First in large letters is the word "*danger*;" then in a few words below, the wheelman is

admonished of just the kind of danger he is to look out for at the foot of the hill. Now, it grieved my heart to find that a good many of these danger-boards had been smashed to pieces by throwing rocks at them, there being plenty of said "rocks" all along the national pike. This sort of vandalism is getting to be really a serious matter. I have actually got off from my wheel, picked up the fragments of a sign-board that had recently been smashed, and then in despair have gone several miles out of my way, and possibly been obliged to ride over a dangerous road after dark, just because of this fashion of destroying sign-boards as fast as they are put up. In our county I have noticed some very pretty ones made of malleable iron. But some of these iron signs have been twisted and bent up so you have to get off your wheel to see what they read. After a few boys have been severely punished, I think perhaps this sort of "sport" will be broken up.

The nearer I got to Washington, the thicker were the oil-well derricks until it really made one think of the masts of schooners in a crowded bay along the ocean-side. After night the whole country was illuminated and made cheerful by the blazing of gas-jets. Beautiful lawns with curved walks and shrubbery were lighted up at night by gas-jets two or three feet high. The gas seems to be so plentiful there it does not seem to be extravagance to light up not only the houses but the doorway yards and lawns.

I found my friend Vankirk at Vankirk Station, five or six miles from the city of Washington. As I rode up in front of his residence I found him and his hired man just getting ready to start out to work. (Of course, I stayed in Washington over night.) When I rode up to where they were busy in hitching up their team I said, "Good morning, boys. Do you suppose there is anybody around here who wants to see *me*?"

You ought to have seen friend Vankirk's face light up after he had taken in the situation. While he changed the order of business and called for a horse and buggy to take us around to the oil-wells I shook hands with the old father and mother, got acquainted with the children and grandchildren, looked over the strawberry and raspberry patch, took a glimpse at the apiary, gazed my fill at the tops of the great hills, and then away down into the valleys. Oh what hills they *do* have in Pennsylvania! And the funniest part of it is, they grow tremendous crops of corn, not only on the side hills, but over the very tops. They do not use fertilizers at all, if I am correct, and but very little stable manure, because they do not have it to use. But in some way or other they manage to get magnificent corn. As nearly as I could find out it is done by a system of rotation and plowing under of clover or timothy at regular periods.

The place where the great excitement was recently started up is away back in the hills, a good way off from "anywhere." Something like twenty wells have already been put down. Out of twenty, two were paying tip-top; three or four moderately, and a dozen or

more are almost dry wells. The gas and oil are found at a depth of from 2800 to 3000 feet. Enough gas has been found in the locality to run all the engines, and there is quite a system of piping to carry the gas to wherever a new well is being put down. Another system of pipes, to carry water, is also needed.

Before we reached the big well I was so used up by climbing hills that I told friend Vankirk I could not go any further and keep up enthusiasm until I had had my regular nap. We found a place where a new dining-hall had just been put up; and I tell you I had a real nice dinner with the well-drillers. I believe they are mostly rather rough in their manners and talk; but friend V. (you remember about the Sunday-school, building and all, that I told you he was largely instrumental in starting) found an opportunity at the dinner-table to discover one or more of the boys who had attended the revival meetings; and I tell you it was refreshing indeed to find even in that crowd that there were at least a few who loved the name of the Lord Jesus Christ.

I had a very refreshing nap in a new room made of rough pine boards; and before taking my nap it was my privilege to pray that the spirit of the Lord Jesus Christ might find a lodging-place in the hearts of those who were delving away down in the depths of the earth for these hidden treasures that God has placed there for his beloved children.

By the way, it seems a little queer that there are just as many wells, if not more, clear up on the tops of the hills, than there are down in the valleys. When we think of the extra labor required to pull timbers and great heavy iron pipes and massive drills up on to the tops of those hills, one might suppose that, so long as it is all guesswork any way, the prospectors and projectors would choose to locate in the valleys. I tried to find out by inquiry what it was that guided them in deciding where to sink a new well. It costs three or four thousand dollars to get down to the proper depth. As nearly as I could find out, they work this way: After a successful well has been struck, others locate around it—not getting too close, however. Now, suppose that oil-wells are failures except in a certain course from the first good one. Of course, the new ventures will be off in a similar direction to this second successful well. In that way they begin to lead off in a certain direction. The first well may be just on the edge of a good field. In that case, the question is to decide in which direction the *center* of the field lies. Now, in connection with the above facts the disposition of the party who owns the land adjoining has much to do with it. Some men will be exceedingly liberal in making terms for drilling test-wells. Others will hold off for better prices. So you see we have two factors to decide where a test-well shall be put down.

Along with the oil come gas and paraffine. The latter seems to be a substance that comes out with the oil, but separates, coating the tubes, the sides of the tank, and every thing else, with its grease. I presume one reason why the flow of any new well gradually sub-

sides is because of the accumulation on the pipes of a coating of paraffine.

The most important well of the group gave about 2000 barrels of oil per day, or pretty nearly that, when first opened; and for three months past it has averaged about 1000 barrels a day. When I was there it was giving some 600 or 700 barrels. But the oil comes intermittently. Some wells do not give oil at all except at stated periods. These periods may be once a day or once in three or four hours; and at times the pressure of oil and gas is so great that the iron pipes writhe and twist about like a snake as they discharge their volumes of gas and oil under the strain of a pressure equal to or perhaps greater than that in many steam-boilers.

Now, friends, there is something very enticing and even fascinating about starting up a new industry away back in isolated country places like this one. It is exceedingly refreshing (especially about *dinner time*) to find a brand-new boarding-hall, clean dishes, pleasant, nice-looking women, and every thing to indicate enterprise and go-ahead. It was pleasant to see the well-drillers doff their overalls, wash up, and sit down to dinner, with hair nicely combed, etc. It was the great well that was spouting forth its treasures, but a few rods away, that furnished the *money* for this enterprise. It is quite likely a town will be built up here, for the Standard Oil Co. has already run up a pipe-line to take away the oil. The wives and mothers will need to come into the neighborhood, and children's voices will be heard; and then, oh how *great* the need of a Sunday-school as well as day school, and a little church! And if these people expect to prosper and be happy, there will needs be a *Sunday* to be remembered and kept holy. May the great God above help our people, in starting things of this kind, to remember they can never be prospered and enjoy real happiness without *righteousness* and *godliness*.

OUR HOMES.

Remember the sabbath day, to keep it holy.—EXOD. 20:8.

The following was read at a semi-annual conference at Chatham Center, Medina Co., O., Oct. 21:

THE CHRISTIAN SABBATH; OUR HERITAGE AS A NATION AND INDIVIDUALS.

Towering high above other blessings we have from the beginning of our nation a heritage of Christian principles; and who that thoughtfully contemplates the past but accepts as true the following words? "There is no heroism like that which comes from hearts filled with heavenly influences."

I am often surprised at the coolness with which many appropriate all the benefits of this government for themselves, and rail at Christianity, but for which there would have been no nation such as this has been in the past, and is now. I would suggest to them, if such be really their honest sentiments, that they make their dwelling in heathen lands, where they will not be troubled with the demands of the Christian sabbath. When we try to contemplate the beginning of our sabbath, the seventh period of time that God hallowed, we seem to stand awed amid creation's dawnings, and hush our breath to listen to the music of the spheres as the morning stars together sing, and,

echoing down the ages, there breaks upon our startled ear, "Remember the rest day, to keep it holy."

In the words of Daniel Wilson, "The sabbath stretches through all ages, affects all men in every period of time, distinguishes the true servant of God from the wicked, more than any other ordinance, upholds the visible profession of religion before the eyes of mankind, is the most direct honor that a man can pay to the name and will of the ever-blessed God, and will never cease in its authority here till our sabbaths on earth give place to that eternal sabbath of which they are the pledge and the preparation." How startled and confused we should be to hear a literal rendering of our opinion in reference to God's command as given by our acts! Do not the actions of even Christian people often say, *remember, unless it interferes with your personal plans and pleasures, or makes you different from those about you?* Never, until the rest day is kept holy, can the power of dollars and cents (now ruling with sovereign sway) be broken. Never, until then, can the thoughts, aspirations, and *politics* of the land be lifted above the mere greed of gain. Eternal vigilance is the price of every thing that is valuable. True, there are bands of earnest men and women engaged in a hand-to-hand fight upon the question of sabbath or no sabbath; but mostly it is personal work or influence that accomplishes desired results.

But we must set the key-note of our observance *very* high. Especially those high in position and influence should do so, as they are a target for criticism, and may be obliged to decide against certain specific things which their own consciences would ordinarily permit them to do, but which they could not do on account of their position.

I have tried seriously to bring these subjects before you, touching upon points for your further thought, instead of trying to amuse you for the time, as I hope it is not with you as has been said of multitudes in the cities, that they need a new set of beatitudes, reading, "Blessed is the man that has money and fun," instead of "Blessed are the pure in heart, for they shall see God." Or, "Blessed is the man that has a job, because he can go to a show," instead of "Blessed are they that hunger and thirst after righteousness," or, "Blessed is the man that has fifty cents, for he can get a dish of ice-cream for his girl and himself."

During the past year California has been the banner State in *work* along the lines of sabbath observance; but it is yet far from being the banner State in general sabbath observance, though some years ago a San Francisco pastor said he had seen the best sabbath observance among the Christian people of California, and some of the characteristics were reverence tempered with love, joyousness, and rare fidelity in Christian service.

The victories or defeats of this cause in one place affect all others. What a widespread stream of death and destruction we sent out from Chicago in 1893! Therefore it is supremely selfish in us to test this question, as we often do, as to what *we* may do by asking, "Will it do me any harm?" Every question about sabbath observance should be measured, not by its effects on *me* but on *man*, for whom, in his world-wide home, the sabbath was made. To Christ, the *soul* is the man, but what is man to us? Is it fine clothes, cultured speech, or fine horses? Or, as one has said, is man a "stomach with appendages," as seems to be the idea of those who quote Christ's words as indorsement for Sunday feasting and picnics. On five different occasions Christ indorsed the sabbath as of perpetual and universal obligation; but many, who dimly perceive that he antagonized *some* sabbath, have jumped to the conclusion that it was the original sabbath he condemned when it was only the human counterfeit. The Pharisees had buried the restful soul-refreshing sabbath of Eden and Sinai under the rubbish of petty rules, such as, not to walk on grass, as the bruising of it would be a kind of thrashing, nor catch a flea, as that would be a kind of hunting. No woman could wear an ornament, because it would be bearing a burden, nor wear false teeth for the same reason. Some of us nowadays consider the wearing of the latter a discipline along the line of patience and perseverance. A radish could be dipped in salt, but not left there, as that would be making pickle; an egg laid in the way of regular business could not be eaten on that day; but if the hen was kept for fattening, and not for laying, it might be eaten, and so on through hundreds of pages of solemn trifling. It was these Pharisaic additions that Christ pushed away without reverence, and not the divine original or a Mosaic rite or institution.

A letter from Toledo, speaking of a young man who stepped from the cars to a saloon, and stayed half a

minute too long last Sunday night, says, "The saloons make scarcely a *pretense* of closing Sundays, but, in fact, are open *every* day and *all* night."

This is one of the greatest foes to sabbath observance. It is difficult to consider one without touching the other, as sabbath observance and temperance go hand in hand.

These subjects vast, their weal or woe
Portend the nation's growth or overthrow;
And I myself, so weak, can only feel
Its danger, and my helplessness to heal.

We have the testimony of many of our best men upon this question. Justice Stroug says, "He is no friend to the good order and welfare of society who would break down our Sunday laws or set an example of disobedience to them." D. L. Moody says, "Show me the nation that has given up the sabbath and I will show you a nation that has got the seeds of decay." Daniel Webster said, "The longer I live, the more highly do I estimate the importance of a proper observance of the Christian sabbath." Henry Ward Beecher, "An abiding civilization has always gone with the Christian sabbath; and I believe it always will." Bishop Cheney, "If ever this country shall be the sport of revolution, the calamity will be seen to have entered through the rents of sabbath desecration."

Brother, sister, will you not each build over against your own house this wall of salvation to our nation, a holy rest day? Do not ape Naaman's indignation at this apparently small work, and refuse to dip in Jordan while you are looking for some large field of labor. I beg of you to see to it that upon the walls of the secret chamber of your soul are written by the Spirit's power, "Holiness to the Lord;" then you will be careful that no careless action or selfish pleasure dim the reflection of its light upon the world around you.

In closing, permit me to use Paul's words to the Philippians: "Finally, brethren, whatsoever things are true; whatsoever things are honest; whatsoever things are just; whatsoever things are pure; whatsoever things are lovely; whatsoever things are of good report, if there be any virtue, and if there be any praise, think on these things."

MRS. CARRIE BEACH.

Chatham Center, Medina Co., Ohio.

I wish to call attention to the second paragraph in the above. People are flocking to the United States from all parts of the world, and we rejoice to have them come, providing they will fall in line with our laws and customs, and *especially* recognize that our nation was founded on righteousness. The motto on our coin is, "In God we trust." But when foreigners come over here to enjoy the benefits of our free institutions, and commence straightway to trample down the sabbath, and try in every way they know how to cast ridicule upon Christianity, then these people should be taught *both* law and gospel. During the past season I have visited more pleasure-resorts than for many years, and I have told you something about them; and I have been very much afraid indeed that our people—and especially our young people—were in danger of forgetting the spirit of the beatitudes. I have been very much afraid, as our good friend has expressed it, that money and fun were being more thought of than being pure in heart; and those who are begging for positions for something to do are often the very first ones to flock to the circuses, even though they have lacked for money to buy flour only a few days before.

While it is right that we should enjoy the outdoor air, the companionship of friends, and possibly ice-cream and lemonade, please let us beware how we get down to that low level of spirituality where, instead of hungering and thirsting after *righteousness*, our hunger-

ing and thirsting shall be for a half-dollar and the ice-cream that it may purchase.

Again, we must hold fast to the Christian sabbath, even when it costs us money to do so.* A few days ago I wanted to cross the State of Ohio. It was going to cost me eight or ten dollars. When I inquired of our agent, "Do you know of any excursion that is likely to come off very soon in that direction?" he said:

"Oh! yes, Mr. Root, there will be one next Sunday, and you can go right down there and back for four dollars."

I shook my head, and reminded him that I did not believe in Sunday excursions.

"Why, Mr. Root, Sunday excursions are getting to be nowadays a most common thing. All the railroads give special low rates on Sunday."

I can not remember what else he said; but when it occurred to me that it was going to cost me something like a five-dollar bill to remember the sabbath day to keep it holy, I breathed a sigh. My friend may have thought it was because I felt bad about losing the five dollars. Bless your heart, no. I never yet lost money in all my Christian life—that is, lost it in the end—by obeying God's law to the best of my judgment, and I had no fear I should lose in this case. But I *did* feel sad and discouraged when I thought of the many Christians who are working perhaps for small pay, whose devotion to and love for the Master's cause is not quite equal to the cross of paying five dollars more for the privilege of traveling on a week day than it would cost them for going on Sunday. Once more, let me add emphasis to that remark of Bishop Chény: "If ever this country shall be the sport of revolution, the calamity will be seen to have entered through the rents of sabbath desecration."



SCABBY POTATOES, AND HOW TO GET RID OF THE INFECTION WHEN IT GETS INTO YOUR GROUND.

This subject has been gone over a good deal, I know, and we have been told again and again how to kill the scab in our seed potatoes with corrosive sublimate. But suppose the scab is already in your ground—what then? Well, my impression has been, after reading every thing I could find on the subject, that there is no very reliable remedy known. The *Rural New-Yorker* suggested the application of sulphur. But I put a barrel of sulphur on about two acres of ground, and

a *part** of this "medicated" two acres produced the scabbiest potatoes I ever saw. This year this part did the same thing again. And another piece, where I plowed under crimson clover, produced about 20 bushels of White Bliss potatoes, and not more than two bushels of the whole lot were fit to be called "firsts," on account of the scab. I began to think I should have to give up raising potatoes—at least on certain portions of my ground. Some years ago T. B. Terry spoiled a piece of his ground—at least he spoiled it for potatoes—by giving it a heavy dressing of cow manure. He sorted out all of his scabby potatoes, and fed them to the *cows* the year before; and then he had scabby potatoes, and no mistake, where *that* cow manure was applied. A few days ago I asked him if he had got that piece of ground "cured." He said the way he cured it was by not trying potatoes there since. That was several years ago. Must I give up potato-growing just because my ground is so exceedingly rich with stable manure? So far I have given you the dark side of the matter. Now for some daylight.

Whenever I plant potatoes after strawberries I get rid of the scab. Is it because we have planted them so late, or because of a heavy growth of foliage on the strawberry-plants? Just at this crisis I got hold of the *Ohio Farmer* for Oct. 14. The very first page of that paper was worth a dollar to me. Here is what I found and devoured so greedily, from the pen of our good friend Alva Agee:

It is the rule, however, rather than the exception, that our scientific authorities in agriculture can help us plain farmers to get at the needed facts, no matter what the local conditions may be. I think that I have a fair illustration of this in one field to-day. Within the last five years, two green manurial crops have been plowed under in this field, and two matured crops of cow-peas. The soil is in much better mechanical condition, and more fertile. But the agricultural chemists say that a green crop, plowed under in warm weather, makes a soil acid, and I find what is, perhaps, proof of a little too much acidity now, by the presence of a sprinkling of sorrel over most the field in the young clover. The soil is in productive condition, and there has never been sorrel to a noticeable extent in this field; but there it is now, and fairly attributable, probably, to the treatment the field has received.

I have another proof that this late plowing-under of rye, or other green stuff, makes the soil acid. We know that potato scab does not thrive in an acid soil. It spreads where stable manure or lime is used. I have a two-acre lot near the barn that was heavily manured in the past, and has probably grown eight potato crops in the last twelve years. Wheat has too soft straw on it, and clover gets killed under the down wheat; so potatoes seemed a necessity. Three years ago the scab had finally become so bad in the soil that the field was unfit for the crop.

A friend recommended plowing under rye to kill the scab germs in the soil, and the result was a fairly clean crop of tubers. Rye was again sown the next fall, and plowed under a little late in the spring. The crop showed that the soil was being cleansed of this disease; and Director Flagg, of the Rhode Island station, says that such results are likely due to the acid condition of the soil produced by the rye. I do not say that a green crop, plowed under late, will always kill scab, as such a crop does not always increase sourness of land perceptibly; but I do believe

* Please bear in mind, dear friends, that a religion that costs us nothing, no self-sacrifice or hardship, is good for nothing comparatively. Jesus said, "He that taketh not his cross and followeth after me, is not worthy of me." So do not be troubled or worried even if it does cost you *hard money* right out to remember the sabbath day to keep it holy.

*The other part, where the sulphur was applied, gave potatoes comparatively free from scab. The next year my crop of chess was on this same ground; and the potatoes were, as I state further along, free from scab. But this, as you will observe, does not score any thing positively in favor of the sulphur application.

that we shall find such means the most effectual one for fighting this disease when it is fixed in the soil. The disease is widespread, and I noticed in the Pittsburgh market this season that many shipments were almost unmarketable on account of it. Some souring of the soil is the rational remedy, and this can be secured by the use of rye without seriously diminishing the yield of the potatoes; and in my own case I am sure that the rye sold always increases the crop of potatoes very materially, being the best fertilizer one can get in a winter-catch crop.

Do you see the point, friends? Now turn to page 502 of GLEANINGS for July last, and see what I said about my winter oats that turned to chaff (?). I told you in conclusion that the chaff was promptly plowed under while in full bloom, June 18, and the ground planted to Freeman and Thoroughbred potatoes. I do not know just when those potatoes were put in, but I think it was toward the last week in June. Had it not been for our severe fall drouth I should have had a good yield of potatoes—yes, a *big* yield. As it was, I had a fair yield for the season; and the happiest part of it is, there was scarcely a scabby potato. In fact, the Freemans were just as nice as Terry's, and some of them weighed a pound.

Now, my understanding of the matter is that planting late has very much to do with avoiding scab. But if we plant late we should turn under some sort of green crop. Now, then, has anybody succeeded in avoiding scab by turning under a green crop *early*? But, by the way, you can not get any green crop to turn under, *very* early—that is, no rank green crop. We turned under some crimson clover rather early last spring; but, as I have told you, that did not help the scab at all.

The next point is, can we avoid the scab by planting about the first of July, or later, even if we do *not* turn under any green crop? Suppose you try extra early potatoes, and dig them and sell them the first of July. If you plant more potatoes on the same ground, will the last ones be freer from scab, when the first ones are badly scabby? I have a partial answer to this question from a neighbor. He planted half of a field to Early Ohio, very early; but something hindered, and it was very late before he put in the rest. The first planted were so scabby that they were hardly worth digging. The last (same seed, same ground, no difference except in time of planting) were the finest potatoes he ever grew—in fact, he took them to the fair, and secured the first premium. In this case the time of planting seems to be the only reason for difference. I do not know whether the weeds got up so high he plowed them under at the second planting or not.

Just one thing more: Can't some of our fertilizer-men give us a fertilizer that will make the ground "sour," so as to kill the scab fungus? I should be glad to get the experience of others on this same point.

HOW TO SUPPORT A FAMILY ON A QUARTER OF AN ACRE.

I propose to give you a brief outline of my experience with glass and cold-frames, as my perseverance, after failures, is partly due to my reading "High-pressure Gardening on One-fourth Acre" in your "Tomato Culture."

I commenced four years ago with 14 sash, five miles in the country; raised plants for my own use, and sold

six or eight sash of lettuce and radishes, with a determination to get closer to market. Second year, 35 sash, one acre bottom land inside of corporation of town of 8000 inhabitants; cash rent of land \$275. I made enough to pay rent and expenses; failed to make more, by planting wrong kind of vegetables on high-priced land. Third year, 135 sash, same land and rent; did well in winter, and good prospects for the summer, but was flooded by high water in the middle of May, and again Sept. 1; back-water 5 ft. deep each time, and covered every thing with mud. Result, I made enough before flood to pay rent, and afterward did not make expenses, due to second flood. Fourth year, 235 sash on a lot 80 x 100 ft.; rent nothing, as lot goes with house I live in. Result of sales from this lot, vegetable-plants, \$125; lettuce, radishes, beets, spinach, and parsley, \$600. Sales of celery from July 10th to Oct. 15th, \$80. Celery on hand at present, 12,000 plants—which I am retailing from 60 cts. to \$1.20 per dozen plants—fully two-thirds of it bringing 90 cts. per dozen plants, which makes my lot of less than one-fourth acre run between \$1500 and \$2000, which demonstrates that a family can live on one-fourth acre.

Nov. 1 will enter my fifth year in gardening with 335 sash; and as I empty each bed of celery (the celery is right in the cold-frame) I fill it with lettuce. This is my first year with celery, as I have mostly raised lettuce.

The first year I planted 6 sash of lettuce, and sold most of it. The second year I planted 20 sash of lettuce; sold about two-thirds of it, this market not being used to early lettuce. Third year I planted 60 sash to lettuce; sold all out by April 15th, right when there was the best demand. The fourth year I sold 180 sash of lettuce from December to June. All this lettuce I have retailed in this town, did all the work in garden myself, averaging about five hours each day.

Staunton, Va., Oct. 16.

J. B. LACKEY.

My good friend, I am exceedingly obliged to you for the many practical points you give. First, do not be discouraged if you do not make a success of it at once. Second, beware of localities subject to overflow. Third, have a home of your own, and do your farming in your own dooryard instead of renting high-priced land. Fourth, it pays to be as close to your customers as you can get, even though the ground is high-priced. Your last record is equal to almost any thing I have seen. It seems to me you paid a pretty big price for rent; but circumstances might, of course, warrant such an outlay. But the worst part of it is, you would have to put on fertilizers, and do work that almost doubles the value of the land, for which you would get nothing. Have a piece of ground of your own as soon as you can; and then not only make every foot of it grow something, but *every square inch*.

A SUGGESTION IN REGARD TO SETTING STRAW-BERRY-PLANTS.

Mr. A. I. Root:—I am very little of a farmer or bee-keeper—am simply an old surveyor and civil engineer, who, being too old for active work, has settled down in the country, like a stick of drift-wood, long carried and tossed on the flood, lodging at last on the bank, where it quietly rests until the dust returns to the earth as it was, and the spirit returns to God who gave it.

I have been a subscriber to GLEANINGS for many years, not so much for the bee-keeping news it contains (I read and am instructed in all) as for the general spirit which pervades it and which harmonizes with my own feelings; and it often makes me long for a good quiet talk with you. We both hate humbugs, and the world is full of deceit, sham, and adulterations. The mass of the people like to be deceived, and honor those most who can and will deceive them, because the mass of the people love deceit; they "love darkness rather than light."

As a rule, the part of GLEANINGS I like best begins with Notes of Travel and ends with High-pressure Gardening. I like to look over your price lists, for they give an idea of what things ought to cost. Here,

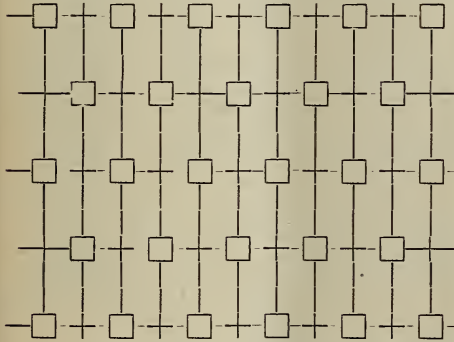
merchants generally charge "all the traffic will bear." On many seeds I can buy in pound lots from my pay postage, and have the seeds delivered at my postoffice, from 10 to 25 per cent cheaper than I can buy in seed-stores in Portland, Oregon, in 10 and 50 pound lots. They simply scoop the seeds out of a sack or bin, and weigh them out to me, and yet some advertise that they get their seeds in carload lots. In bee-fixtures they used to charge just a *little* less than they could be obtained from you by freight in 100-pound lots. I am glad to say prices are coming nearer to the eastern level, and I think that you and others like you are to be thanked for it.

I like your High-pressure Gardening very much, and get many ideas and much encouragement from it. You have such an enthusiastic way of talking about things that it makes one feel like trying it for himself.

In Sept. 15th GLEANINGS, page 681, you tell how to set plants so that the lines joining the plants will form equilateral triangles, and each plant be equally distant from the six others nearest to it. I think I can give a more rapid way of doing this work, that, with care, will give just about as accurate results.

Rows are first to be marked out just as you described, say from east to west. Now, given the distance the plants are to be from each other, to find the distance the east and west rows should be apart. This can be done by multiplying the distance between plants by one-half of the square root of 3, which is 0.866; or, if preferred, multiply by 26 and divide by 30, which is nearer the true distance than you can mark the rows. Now mark off the ground with north and south rows, just half as far apart as the plants are to be from each other. Then set plants in the first east and west row, at *every other cross-mark*. Then do the same with the second row, setting the plants in the cross-marks of the north and south lines that were *skipped* in the first row.

Calling the distance between plants 24 inches, $24 \times .866$ or $24 \times \frac{26}{30}$ equals 21 inches nearly. See sketch below.



HOW TO LAY OUT THE GROUND WITH A COMMON MARKER SO AS TO BRING YOUR STRAWBERRY-PLANTS LIKE THE CELLS OF A HONEY-COMB.

This method can be applied to trees as well as plants, on large fields as well as small plats.

I think of trying a half-acre or more of mangels by this method next spring, setting plants 18 inches from each other, as I find they stand transplanting well. Transplanting is much slower work than drilling, but will save much time in weeding and thinning. If plants are set 18 inches apart, there will be a little over 22,000 plants per acre. I have had mangels that weighed over 20 pounds. Now let Huber figure how many tons per acre 20-pound mangels would give, and see if that is not "*high-pressure*" gardening.

Corbett, Ore., Oct. 5.

JOHN A. HURLBURT.

Friend H., we are much obliged to you, and we are very glad to find a civil engineer who is turning his attention to high-pressure gardening. No wonder you gave us so short and accurate a method of arranging plants hexagonally. To do this we really ought to have two markers—one to make marks one foot apart, and the other to make them nearly 21 inches. With a horse, and a marker say six or eight feet wide, ground could be marked very rapidly. For small areas, of course hand

markers made narrower accordingly would be more convenient. I hardly need explain to our readers that the squares are to represent strawberry-plants. Thanks for your kind words for our efforts in the way of cutting off the profits of middlemen, and getting seeds directly from the grower to the planter by the shortest cut. This season our cucumber and melon seeds are all grown especially for our trade by a seed-grower who is also a bee-keeper. If I were to tell you what he gets from seed-growers for his seeds you would not wonder we are able to offer many of them at half the prices made by many of the catalog men.

We copy the following from the *Ohio Farmer* for Oct. 14:

A BOLD SWINDLER.

In our news items last week we referred to the arrest of Carl B. Cline at Columbus, O., for using the U. S. mails for swindling purposes. The Columbus papers give us full particulars. At the bank he was known as Cline; at Livingston's seedstore he was known as Mr. Craft. He bought most of his "sample" seed wheat at Livingston's. At his apartments on Naghten St. he was known as "Mr. Ferrington." About Aug. 1st he advertised "Early Surprise" wheat in the agricultural columns of religious papers from Maine to California. He also advertised in some agricultural papers. He said he raised 468 bushels of this wheat from 10 acres: that it had such stiff straw that it could not be blown or beaten down by storms, etc., and offered to send sample by mail for three two-cent stamps. The stamps poured in from all over the country, and he sent samples of wheat purchased at Livingston's accompanied with a circular offering to ship one bushel for \$1.50, five bushels for \$1.35 a bushel, and ten bushels or upward for \$1.25 a bushel. Orders poured in at the rate of \$50 to \$100 a day; and the officers who arrested him Oct. 1st estimate that he had received fully \$2000. When complaints began to come in he bought some rejected wheat and filled part of the orders, but most of them were not filled at all. His race was short.

Now, friends, where is the trouble? Who is to blame? The trouble is here: This man, when he advertised, was a new man, unknown to anybody. Before sending him money, the farmer should have gone to the bank and had them look the advertiser up; or, if that is not convenient, write to the editor of the paper that published the advertisement, and ask him to find out whether or not the advertiser is responsible. This can be done in a minute's time by anybody who has access to Bradstreet or Dun. If you can not find his name, do not send him any money. Beware especially of anybody who claims to have something greatly superior in a great staple like wheat. Our experiment stations are watching every thing of this sort with great interest. An investigation in Columbus would have brought to light at once the facts given above. And now I hope none of the agricultural papers will feel hurt when I suggest that no advertisement should be received from *anybody* until he gives satisfactory reference, or is found quoted by Dun or Bradstreet. If this were followed up, such fellows as "Cline," "Craft," and "Ferrington" would be brought to a standstill at the outset. They could never get into any agricultural paper, and, in fact, I should like to say in *any other* paper until given some reasonable proof that they were straight square men, and not somebody sailing under an alias or false colors of any sort.

KIND WORDS FROM OUR CUSTOMERS.

The queen you shipped Sept. 13 came in splendid condition, and I must say I was very well pleased with her—7 days on road. There was not one dead bee in the lot. NEWTON SHELTON.

Big Pine, Cal., Sept. 29.

The sections you sent me have come to hand, and they are the nicest I ever had. They are square when put together, and the dovetailed corners fit nicely. I am surprised at the low freight rates from Medina. I don't think I shall ever try to keep bees without GLEANINGS. W. H. PARKER.

New Castle, Ala., June 29.

Please accept my sincere thanks for your very kind note telling me how best to treat the "Darling" strawberry-plant recently received from your house. It is the very handsomest plant I have ever seen. I did not need to shade or coddle it in the least. When I took it out of the box it was as fresh as when you put it in. It has already made two new leaves and a runner, which last I promptly clipped. My pit is an excellent one, well drained, with a southern exposure, so that I am expecting the plant to start into an early and vigorous growth next spring. This plant is so handsome and well established that I feel sure it must be greatly superior to any thing that you will send out in quantities, nevertheless I shall send you an order for some of your pet Jessies in the spring. By that time I shall have mastered the A B C so thoroughly as to be able to treat them intelligently.

Richmond, Ky., Oct. 4. MISS MARY F. CROOKE.

Gleanings at Reduced Rates.

With a view to encouraging membership to all kinds of bee-keepers' associations whatever, local or otherwise, we have decided to offer GLEANINGS at 75 cts. per name to members of such organizations. Old or new subscribers may take advantage of this offer; but in the case of the old, all back subscriptions must be paid up before the 75-cent rate for a year will be allowed; otherwise only nine months will be credited.

We must either require all subscriptions at this reduced rate to come through the secretary, or we must have evidence of some sort that you belong to some bee-keepers' society. Simply a line from the secretary, stating that you are a member in regular standing, will suffice. At your next annual meeting, bear this in mind; and if you wish to become a subscriber to this journal, hand 75 cts. to your secretary, and when that amount is received by us your name will be placed on our subscription list for 12 months.

If you do not now belong to any association, send \$1.75 to us or to Secretary Dr. A. B. Mason, of the United States Bee-keepers' Union, at Toledo, Station B. This will entitle you to a year's membership and protection in the Union, and one year's subscription to this journal.

The A. I. Root Company,
Medina, Ohio.

Queens,

Untested queens, 50c each; tested, 75c; Breeders, \$2. Either leather or golden. My golden breeders breed all 5-banded bees.
W. H. LAWS, - Lavaca, Ark.

Dovetailed Hives,

Sections, Extractors, Smokers, and every thing a bee-keeper wants. **Honest goods at close honest prices.** 60-page catalog free.

J. M. JENKINS, Wetumpka, Ala.

No cheap Queens to sell; but the best.

Golden 5 band, or 3 band from imported mother. Untested, 75 cts.; tested, \$1.00.

L. BEAUCHAMP, Box 613, San Antonio, Texas.

REDUCED PRICES.

Warranted Italian queens, 60c each; 4 for \$2.00. Selected warranted, 75c each; 3 for \$2.00. Untested, 50c each; 5 or more, 40c each. These prices are good for the balance of this season only. Safe arrival and satisfaction guaranteed.

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Unless you put your name on the box, and notify us by mail of amount sent, we can not hold ourselves responsible for mistakes. It will not pay as a general thing to send wax by express.

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